

# Sports & Eyewear Safety for Your Pediatric Patients

ABO Level II - 1 hour



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

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# Financial Disclosure Statement

## **Andrew Bruce . . .**

- Has received honorariums from:
  - VSP Optics
  - Mitsui Chemicals
  - Kaiser Permanente Vision Essentials
- Is on the CLSA Board of Directors and serves as technical education advisor
- He has served on the Dispensing Optician Examination Committee for the Washington State Department of Health
- All relevant relationships have been mitigated
- Has NO financial interest in any product presented in this course

# Outline/Objectives

1. Review sports related eye injuries and statistics
2. Discuss ASTM standards for sport protective eyewear
3. Discuss the importance of patient/parent education
4. Discuss ways to present sport protective eyewear.

**I Don't Know How.  
They Just Broke!**



# Statistics



- In U.S. every 13 minutes, an ER treats a sports-related eye injury
- Most eye injuries among children aged 11 to 14 occur while playing sports
- One-third of sports related eye injuries occur in children, and are leading cause of childhood blindness - what does this mean?
- 1 in 12 patients will seek legal counsel for severe, sports related, eye injuries.



# Study Findings



- 21% of children, ages 6-17, play a sport, 55% of high school students
- 14M children play a sport involving a racquet or stick
- 77% of teens favor martial arts over other sports
- 1 in 18 college athletes will sustain an eye injury; 1 in 10 college basketball players.

# Top 15 Sport-Related Eye Injuries in U.S.

Activity	Est. Injuries	Ages 0-14	Ages 15+
Pool & Water Sports	2678	<b>1104</b>	1574
Non-Powder Guns, Darts, Arrows, Slingshots	2518	957	1561
Basketball	2429	659	1770
Exercise, Weight-Lifting	2395	98	<b>2298</b>
Bicycles & Accessories	1334	267	1067
Other Sports & Recreational Activities	968	138	830
Baseball / Softball	935	510	425
Playground Equipment	873	741	132
Soccer	788	106	681
All-Terrain Vehicles (4 wheels)	759	162	598
Fishing	546	139	406
Racquet Sports	533	301	232
Golf	485	5	480
Football	466	335	131
Boxing, Martial Arts, Wrestling	459	155	304
<b>Totals Reported by PBA (-30% from 2019)</b>	<b>19,354</b>	<b>6,377</b>	<b>12,977</b>

Prevent Blindness America (PBA) Publication (2020)



# Sports Categories In Terms of Eye Injury Risk

<b>Very High-Risk</b>	<b>High-Risk</b> Involve body contact and the use of a racquet, stick, bat, puck or ball, or a combination	<b>Low Risk</b>
Martial arts	Football, Baseball, Basketball, and Soccer	Track & field
Wrestling	Tennis, Table Tennis, and other racquet sports	Gymnastics
Boxing	Water Polo, Fencing, and Golf	Cycling
	Lacrosse and Hockey	Swimming

# Value of Sport Protective Eyewear



- Median age for eye injuries  $\approx$  8 years
  - Age of myopia onset and starting sports
  - Perhaps a correlation?
  - Recommend investment in child's eye safety
- Data suggests well-fit, sport-protective eyewear may reduce eye injuries by as much as 90%.

# Action Steps



- Educate parent & patient to increase awareness about eye safety and task-appropriate eyewear
- Share statistics with parents, and patients old enough to understand
- Discuss use of “dress frames” vs. “sports frames”
- Recommend frame and lens options that will provide your patients with great vision and eyewear protection.

# Frame Categories



- ANSI Z80 committee standards
- Dress frames Z80.5
- Occupational / industrial safety frames Z87.2
- Sports protective eyewear ASTM F803-19.

# ASTM F803-19 Standards



- American Society for Testing and Materials established F803-19 standards for sports protective eyewear
- Must withstand impact forces from projectiles sized between 40 and 65.1mm, fired at speeds up to 90mph
- Manufacturer compliance is voluntary, NOT mandatory
- Sports covered under ASTM F803-19 . . .
  - Baseball and Softball
  - Basketball
  - Soccer.

# Additional ASTM Standards for Sports Eyewear

- Women's lacrosse: ASTM F3077-21
- Field hockey: ASTM F2713-21
- Racquet sports: ASTM F3164-19.





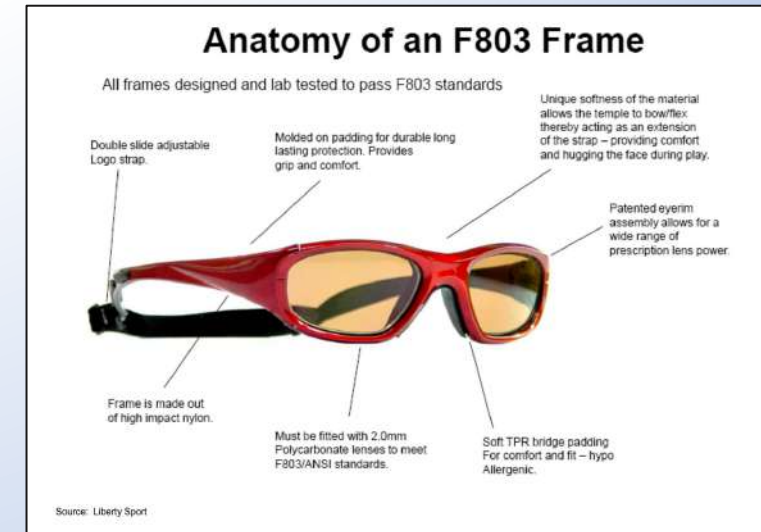
# ASTM F803-19 Frames

Approved frames must include . . .

- Manufacturer's identity
- Frame model identity

Label or tag must be attached to, or accompany frame at time of sale that indicates . . .

- Month and year of manufacture
- Clear, permanent markings providing sizing guidance - gender, age, size
- Clear statement defining the sport or sports for which the eyewear is designed.

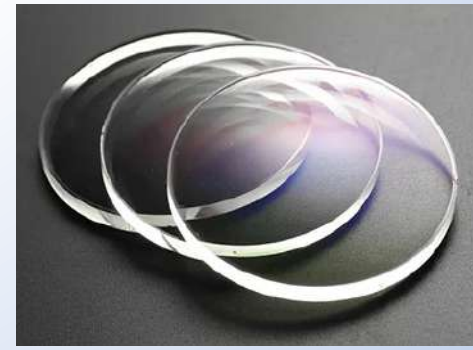


# Points to Keep in Mind

- A squash ball can propagate more energy than a 0.22 caliber bullet
- A hockey puck can travel at 90-100mph
- A badminton shuttlecock has been clocked at 180mph.



# Lens Materials for Sports Protective Eyewear



- ANSI / ASTM stipulations - NONE!
- ECPs responsibility to recommend best for great vision and eye safety
- Recommend polycarbonate for ALL sports protective eyewear
- Why poly and not Trivex?



# Sports Eyewear Presence in Your Dispensary

- Be a serious player
- Have a dedicated section & adequate selection to accommodate all sports
- Have "cool" colors, especially for children.





# Leading Players

- Bolle
- Leader (Hilco)
- Liberty Sport (Rec Specs)
- ProGear
- Wiley X (Youth Force).



# Marketing and Spreading The Word

- Research local school team colors
- Meet with local sports coaches
- Incentivize fitting the entire team
- Volunteer to speak at local sports events
- Write an article for the local newspaper
- Contact local radio and tv stations.







# Power of Your Website/Social Media



- Share information and statistics
- Target Specific Times
  - “Back to School” season
  - Beginning of each sport season
  - April (*35% of eye injuries in May, June, & July*).

# Effective Communication



- Incorporate a patient lifestyle questionnaire
- Ask open-ended questions during the exchange . . .
  - What are their daily visual demands?
  - What are their interests/hobbies/sports activities?
- Get the doctors onboard
- Take every opportunity to educate and share the benefits of sports protective eyewear.

# Presenting The Second Pair

- Approach from an eye safety perspective
- Be informative and knowledgeable of the facts
- Connect product benefits to patient needs
- Offer multiple pair discounts
- Planting the seed now, can lead to return visit.





# Importance of Staff Training

- ALL staff members should be capable of answering questions about eye safety
- Take advantage of free vendor training videos
- Invite vendor reps to provide training.

# What About Photochromics?



- Perfect choice for sports that take place both indoors and out
- Great choice for pediatric patients
- Provide 100% UV-A and UV-B protection
- Provides selective filtration of blue light.

# Does Sports Eyewear Need an AR Coating?



- Why wouldn't it?
- Improves clarity and precision
- Premium AR coatings also provide enhanced durability and easy maintenance
- Premium AR coatings generally have great warranties.



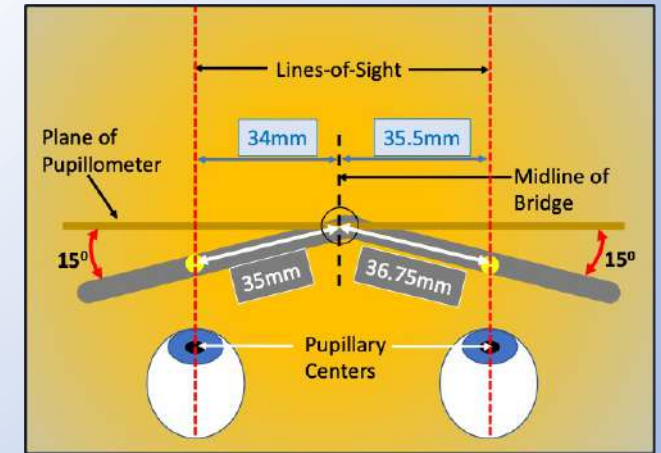
# Working With Wrapped Frames



- Changes in lens position will change what the patient “sees”
- Use technology to your advantage - freeform lens designs that offer POW precision
- Certain lens designs are intended for frames requiring steep base curves.

# PD and Prism Compensations

- Wrap shifts horizontal OC and induces BO prism OU
- With a freeform lens, lab compensates for induced power changes and prismatic effects, but not OC displacement
- PD modification is the optician's responsibility:
  - New PD =  $1/\cos$  wrap angle x measured mono PD.



© Palmer Cook, OD

Wrap Angle	Approx. PD Modification
Up to 6°	None
16°	Add 1mm OU
26°	Add 2mm OU

# Scientific Calculator on iPhone

Example: wrap = 25° mono PD = 30mm

**Step 1:** Open calculator, rotate iPhone sideways

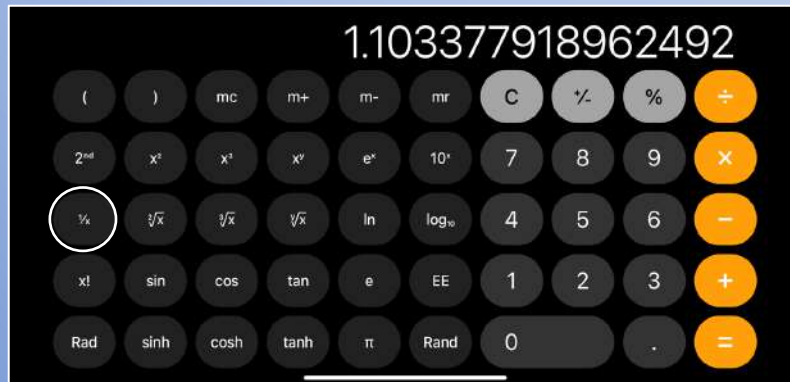
**Step 2:** Enter 25 (wrap), press cos



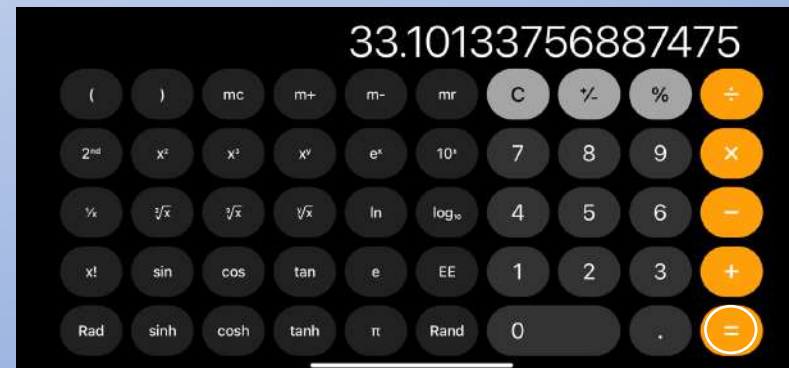
**Step 4:** Press X and enter 30 (orig. PD)



**Step 3:** Press 1/x



**Step 5:** Press = for new PD



# To Take Away . . .

1. Every step should be taken to educate patients, and their parents, about the eye safety issues related to sports activities
2. Ask every patient, “Do you play a sport?”
3. Emphasize the role of dress frames vs. that of sports-protective eyewear
4. Discuss the value of the parent’s additional investment, in terms of their child’s long-term eye safety, not the welfare of the frame
5. Make it known that compliance to ASTM standards is voluntary, and that not all sports eyewear is the same
6. Discuss the added reassurance of enhanced eye safety that comes with ASTM compliant frames that you’re recommending
7. Let your patients and their parents know what to look for to make sure they’re getting the highest-quality in sports protective eyewear
8. And make a difference by improving the statistics, one child at a time.



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# Thank You!

**Speaker Contact Information**

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