Taking Responsibility for Your Patient's Eyes Sunwear IS the Other First Pair

By Diane F. Drake, LDO, ABOM, NCLEM, FNAO

#### **Course Description**

As more consumers than ever before are active outdoors, eyecare professionals need to realize that Sunwear is just as important as a person's indoor eyewear. Many patients/customers may not be aware that "real" sunwear is available in prescription as well as plano. This course will discuss the opportunity as well as the responsibility of the ECP to introduce information to the patient/customer about the risks of not protecting their eyes with quality sunwear. Information will include who needs quality sunwear, ocular damage caused by UV radiation, discussing lifestyle requirements for sunwear and how the ECP should position sunwear in their practices. Included will be selling points for Rx Sunwear.

#### Learning Objectives/Learning Outcomes:

At the completion of this course the participant should:

- Identify who needs quality Sunwear.
- Be able to discuss quality prescription and plano sunwear with each patient.
- List ways that UV from the sun can damage a patient's/customer's eyes.
- Identify the needs of the patient for sunwear, based on lifestyle questioning
- Understand the power of branding in introducing Sunwear to patients/customers.
- Introduce phrases, "Sound Bites", that get the patient's attention to understand the true value of Rx Suns.

#### Introduction

- Who should be involved in discussing sunwear
- The effects of light on the eye
  - Types of glare
- Tints
- Coatings
- Who needs good quality sunwear
   Plano and Rx
- The importance of branding
- "Sound Bites"

Who should be involved in discussing sunwear

- Every person who is part of the eyewear delivery system
  - Ophthalmologist
  - Optometrist
  - Optician
  - Optometric Technician
  - Ophthalmic Technician
  - Office Staff

#### Sunwear 101

#### **Electromagnetic Spectrum**



#### UV Awareness Over 96% of Americans know UV damages skin..

An 18 month old shows no evidence of UV damage under both visible and UV illumination...

A 4 year old already shows freckling (nose) under UV illumination...

A 64 year old has evidence of damage under visible and UV illumination...



# <6% of Americans know UV damages the eye...

Healthy ocular structures undamaged by UV...



... UV contributes to pterygium, cataract, and ARMD damage

UVB & the Eye SPK, or superficial punctate keratitis, occurs when the cornea absorbs an excessive amount of UVB in a short period of time.

Like a sunburn on the eye, UVB destroys corneal cells- causing them to rupture...

...the results are **VERY painful** (and occur about 6 hours after exposure)



## UVB & the Eye

Chronic UVB exposure leads to a pterygium. People who work outdoors are 3x as likely to develop a pterygium, and 6x as likely to develop a keratopathy (a deposit of proteins on the cornea which cause an opacity).



#### UVA & the Eye

UVA affects both the cornea and crystalline lens, and has also been tied to the formation of cataracts.



Cataract surgery is the most common surgical procedure performed on Americans aged 65 and olderaccounting for \$3.4 billion in Medicare payments each year.



#### Other UV exposure risks...

#### ...as does arc welding



30-80% UV

#### ...water reflects 7%

...asphalt reflects 8% UV

...concrete reflects .sand reflects 25% UV 12% UV

#### **Discussion "Starter Questions"**

What UV protection do you use for your eyes?

Did you bring in your prescription sunglasses today?

Would you like to fill your prescription sunwear also?

Have you had the experience of dealing with road or windshield glare while driving?

How many different pairs of glasses do you have for other uses?



#### Safety working in the yard

- Lawn mowers
- Power tools
- Power trimmers
- Grinding tools
- Chain saws
- Hammers
- Others





## How Light Affects The Eye

#### Positive effects

- Vision
  - Pupil dilates
  - Allows vision to take place
- Responses
  - Studies show that people are affected positively by light.
  - Low light areas, show more depression
- Negative effects
  - Damage to ocular structures
  - Glare
  - Reflections

#### How Light Affects The Eye

- Three main concerns
  - UV Light
  - Blue Light
  - Glare

# UV Light - Invisible Light

- Ultraviolet light is the high-energy invisible light that is divided into three categories
  - UV-A
    - 315 to 380 nm
  - UV-B
    - 280 to 315 nm
  - A & B
    - Can cause damage to the tissues of the body including the eye
  - UV-C
    - 190nm to 280 nm
    - Not thought to be of concern

# UV Light

Sources of UV

- Sun
- Computer monitors
- Reflective surfaces including water
- Sand
- Snow
- Others

# UV Light - Invisible Light

- Nonprotection from UV may contribute to:
  - Early cataracts
    - Sunshine or brown cataracts
  - Pterygium
  - Pingueculae
  - Macular Degeneration
  - Accelerated Ocular Aging
  - Weakened Color Vision
  - Photokeratitis
    - Increased Ocular Light Sensitivity and Tearing
  - Permanent Visual Damage
  - Lid and skin cancers around the eyes

## High-Energy Visible Light

#### • HEV

#### – Blue light

- More accurately the blue and violet portion of the visible spectrum
- Research is beginning to show to be a contributing factor to AMD
  - As we age, we produce fewer antioxidants and lose more melanin pigment in not just skin but retina as well
  - Lighter complexions, light eye colors, the greater exposure risk becomes

### Visible Light

- Visible light is referred to as white light
- When it hits a prism, it is slowed and bent
- Each color and wavelength is bent to a different degree
- The result of this is a rainbow resulting from the dispersion of the wavelengths
- The wavelengths from longest to shortest are red, orange, yellow, green, blue, indigo, and violet

- ROYGBIV



#### Dispersion

- Red is the longest wavelength

  travels fastest
  bends less

  Violet is the
  - shortest wavelength
    - travels slowest
    - bend most



## Effects Of Light On The Eye

- Glare
- Reflections
- Discomfort

#### How Can Glare Affect Vision

Types of light produce glare

Types of glare

 Distracting glare
 Discomforting glare
 Disabling glare
 Blinding glare

## **Distracting Glare**

- Produced when light reflects from lens surface or internal
  - Streetlights
  - Car lights
  - Overhead light
  - Computer glare
- Causes squinting
- Eye fatigue
- Reduced vision
- Annoyance

### **Distracting Glare**

- Best protected by:
  - Light tints
    - With AR coating
    - With UV filter
  - Clear
    - With AR coating
    - With UV filter
  - Variable tints
    - Transitions/Sunsensors/Instashades/Etc.
    - With AR coating

#### **Discomforting Glare**

Produced by light source changing

- From shade into bright sunlight

- Eye is unable to adapt to changes comfortably
  - Squinting
  - Eye fatigue
  - Discomfort

#### **Discomforting Glare**

Best protected by:

- Medium to dark tints

- With AR coating
- Variable tints
  - Transitions/Sunsensors/Instashades/Etc.
  - With AR coating

#### **Disabling Glare**

Light is extremely intense

- Actually blocks vision
- Eye fatigue
- Squinting
- Contrast diminished

#### **Disabling Glare**

• Best protected by:

- Fixed dark tints

- With or without backsurface AR coating
- Variable tints
  - Transitions/Sunsensors/Instashades/Etc.
  - With or without backsurface AR coating
  - With or without Mirror Coatings
- Polarized tints
  - With or without backsurface AR coating

#### **Blinding Glare**

- Produced by light reflected off smooth, shiny surface
- Can block vision
- Produces squinting
- Contrast diminished
- Eye fatigue
- Dangerous driving conditions

#### **Blinding Glare**

• Best protected by:

#### Polarized tints

With or without backsurface AR coating

#### What is Blinding Glare?

#### **Glare And Reflections**

- Visible glare
  - Sunlight that is reflected off of surfaces such as car windshields, snow, and sand
  - Dangerous
    - Washes out colors
    - Photokeratitis
    - Temporary snow blindness
    - Blinding Glare

#### **Polarizing Filters**

Virtually eliminate reflective Glare
 Blinding Glare

#### **Polarized Lenses**

- Not recommended for visual tasks that involve the use of LCD (Liquid Crystal Diodes) instrumentation
  - The polarizing filter blocks them out
  - Examples
    - Gas pumps
    - Some automobile panels
    - Some airplane panels
    - Some watches



- Colors of tints for various visual tasks
- Combining tints with different materials

#### Lens Materials

- Glass
- CR-39
- Polycarbonate
- Mid Index
- High Index
- Trivex
- Proprietary materials

#### Coatings

- UV coatings
  - Features and benefits
  - Reduce damage referred to earlier
  - Inherent in certain lenses
    - Polycarbonate
    - Many of the high index materials
    - Trivex
    - Polarized lenses

#### Coatings

- AR Coatings AR Lenses
  - According to AR Council
    - Only 28.7% of eyewear dispensed in USA has AR coatings
    - Compared to 40% in Canada, 70% in Europe, 95% in Korea, and 98% in Japan

#### AR on Sunwear

- Back surface AR
- Combine AR with photochromics

### Coatings

- Who benefits with ARC
  - Everyone
    - Night driving
    - Reflections at work
    - Personal Appearance
    - Sunwear and Sports Wear

#### Coatings

- Mirror Coatings
  - Thin metallic treatment (silver dioxide) applied to front surface
    - Oftentimes accompanied by AR backsurface coating
  - Top gradient
    - Graduated mirror, heaviest at top
  - Double gradient
    - Heaviest at top and bottom with middle not mirrored
  - Full mirror
    - Complete flash mirror
    - Some heavily full mirrored lenses provide the most protection against intense glare

#### How To Discuss Quality Sunwear With Each Patient

- Begin discussion with comments on medical importance of sunwear
   – Protection
- Ask lifestyle questions
  - Show a pair of sunwear and ask them to try them on
    - Resistance may be that they need Rx
    - You're on...begin explaining that they can get ...."Real" sunglasses in their prescription

# Who Needs Plano and Prescription Sunwear?

- Seniors
- Boomers
- Gen X'ers
- Children
- Infants

#### Who Should You Discuss Sunwear With?

- Prescription Eyeglass Wearers
- Contact Lens Wearers
- Refractive Surgery Patients
- People on Certain Medications
- People Who Have Emerging Cataracts
  - People Who Have Had Cataract Surgery
- Anyone Who Spends Time Outdoors In The Sunlight
- People Who Want to Look "Cool"

#### Discuss Plano and Prescription Sunwear For Children

- More vulnerable to eye damage from long term exposure
- They spend more time outdoors than average adults
- Crystalline lens transmits more UV to the retina than in adults
- 80% of lifetime exposure to UV by age 20

#### Discuss Prescription Sunwear For Children

- Parents need to be educated on risks of UV
- Children need impact-resistant polycarbonate lenses
- Good quality sunwear needs to FIT...
- Kids love brands

 Prescription sunwear can be made in favorite brands and colors

 Use direct and open ended questions to find out the lifestyles of your patients/customers

 "Mr. Jones, please discuss your outdoor activities with me, so that I may guide you in appropriate choices."

- Discuss critical use of eyewear
- "Mr. Smith, you stated that you drive for a living. Did you know that blinding glare is responsible for a very high percentage of traffic accidents? Let me explain how quality polarized prescription sunwear could actually make you safer while you drive."

- Use features and benefits based on lifestyles responses.
- "Ms. Jones, you mentioned that you do a lot of boating. Let me demonstrate to you how good quality polarized lenses can make you more comfortable on your boat. You can also get these prescription lenses in these great designer brand ....frames, just like the celebrities."

- Discuss features and benefits of lens enhancement/tints/UV/AR
- "Ms. Smith, you mentioned that you enjoy jogging in the early morning in the park, just as the sun comes up. Let me show you these orange lenses with AR coating. They will increase contrast and allow you to see the track better, while reducing glare.

#### "Sound Bites"

• Phrases that get the patient's attention to understand the true value of Rx Suns.

#### "Sound Bites"

- Comments on proven benefits of quality sunwear protection
- Facts about quality sunwear
  - Not just a fashion accessory, but vision equipment with a welcome fashion component

#### "Sound Bites"

- Comments on features and benefits of fit, fashion, function
  - Especially fit for each patient
  - "Once you try a pair of good quality sunwear, you will never be without a pair again."

#### The Power of Branding

- Why Brands
- Why It's important in discussing Rx Sunwear
  - Recognition
  - Simplify
  - Prestigious
  - Positions you as fashion-oriented, qualityconscious ECP

#### The Power of Branding

 Identify the wish list of your patient/customer

- Brands make them feel comfortable
   They are "at home" with "THEIR" brand
- Brand could be fashion, extreme, daring, fun, etc.

#### Conclusion

- Everyone needs quality sunwear
- Prescription wearers need sunwear too
- Discuss good quality prescription sunwear with each patient
- Explain how good quality prescription sunwear protects your patient's/customer's eyes
- Identify the needs of your patient for sunwear, based on lifestyle questioning
- Present "Sound Bites", that get the patient's attention to understand the true value of Rx Suns
- Understand the power of branding in introducing Rx Sunwear to patients/customers.

#### Questions/Answers

#### Thank You