

1 **Training the New Apprentice**

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2  **The Agenda**

- Introduction
- The beginning
- Prescription interpretation
- Frame selection
- Lens Selection
- Precise measurements
- Effective Communication
- Thorough Quality Control
- Precise Dispensing and Fitting
- Conclusion
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3  **Introduction**

I'm not a firefighter

4  **The beginning**

First and foremost is Knowledge.

Technical Knowledge

Proper tools

Mind set

5  **Prescription interpretation**

**OD and OS: "OD" stands for "oculus dexter" (Latin for right eye), and "OS" stands for "oculus sinister" (Latin for left eye). The prescription may list different values for each eye.**

**Sphere (SPH): This indicates the level of nearsightedness (indicated by a negative value) or farsightedness (indicated by a positive value). The higher the number, the stronger the**

prescription.

## 6 Prescription interpretation

**Cylinder (CYL):** If the prescription includes this value, it means there is astigmatism present. It represents the amount of astigmatism correction needed and is accompanied by an axis value (in degrees) that indicates the orientation of the astigmatism.

**Axis:** This value is only present if there is astigmatism. It indicates the orientation (in degrees) of the cylindrical correction needed to correct astigmatism

**Add (ADD):** This value is applicable for individuals who require reading glasses or bifocals. It represents the additional magnifying power needed for near vision.

## 7 Astigmatism

A common eye condition that affects the curvature of the cornea or lens, leading to blurry or distorted vision. Unlike a normal eye, which has a round cornea, someone with astigmatism has an irregularly shaped cornea, more like a football or rugby ball. This irregularity causes light rays to focus unevenly on the retina, resulting in blurred vision at various distances. Astigmatism can occur alongside nearsightedness or farsightedness and is typically corrected with eyeglasses, contact lenses, or refractive surgery.

## 8 Prescription interpretation

**Prism (PRISM):** This value is mentioned if there is a need for prism correction, which is used to address eye alignment issues or double vision. It is accompanied by a base direction (in degrees) indicating the direction of the prism.

**Pupillary Distance (PD):** This measurement represents the distance between the center of each pupil. It is crucial for accurately positioning the lenses in the frame to ensure proper vision alignment.

## 9 Frame selection

Ensures that your eyeglasses sit comfortably on your face, preventing discomfort or pressure points. Ill-fitting frames can cause headaches, soreness, or even skin irritation.

Ensures optimal vision correction. When frames are aligned correctly, the lenses are positioned properly in front of your eyes, allowing you to see clearly through the prescribed areas. Additionally, well-fitted frames prevent the lenses from moving or shifting, which could affect your vision.

Properly fitting frames enhance your appearance by complementing your facial features and maintaining a balanced look. By considering factors such as bridge fit, temple length, and frame width, you can find frames that not only feel good but also look great on you.

#### 10 Frame selection

**Lens Width:** It refers to the horizontal width of each lens in millimeters. This measurement typically ranges from 40mm to 62mm.

**Bridge Width:** This measurement represents the distance between the two lenses, specifically the narrowest part of the frame that rests on your nose. It is typically measured in millimeters.

**Temple Length:** Also known as the arm or temple arm length, it refers to the length of the temple from the hinge to the end that rests behind your ear. It is usually measured in millimeters.

#### 11 Frame selection

**Lens Height:** This measurement represents the vertical height of each lens. It is crucial for individuals with progressive lenses or those who require specific lens heights for optimal vision.

**Frame Width:** The total width of the frame from one temple to the other, including the front of the frame. It is typically measured in millimeters.

These measurements are essential for finding the right frame that fits comfortably and suits your face shape. Keep in mind that these measurements can vary slightly between different manufacturers and frame styles.

#### 12 Lens selection

**When selecting lenses, several factors should be considered to determine the best option for the patient's needs:**

**By understanding the prescription and understanding the patient's needs you will be able to guide the patient to making the correct decision and selecting the correct lenses style, materials and features that will enhance their vision.**

13  Lens selection

**Crown Glass (Index: around 1.523):** Crown glass lenses are relatively heavy and thicker compared to other materials. They offer excellent optical clarity but may not be suitable for high prescriptions due to their weight and thickness.

**CR-39 Plastic (Index: around 1.498):** CR-39 plastic lenses are lightweight and have good optical quality. They are commonly used for low to moderate prescriptions.

14  Lens selection

**Polycarbonate (Index: around 1.586):** Polycarbonate lenses are highly impact-resistant and are a popular choice for safety glasses, sports eyewear, and children's glasses. They are lighter and thinner than crown glass and CR-39 plastic.

**High-Index Plastic (Index: typically ranges from 1.56 to 1.74):** High-index plastic lenses are thinner and lighter than traditional materials. They are ideal for higher prescriptions, as they reduce the thickness and weight of the lenses. The specific index of refraction depends on the type of high-index material used.

15  Lens selection

**Abbe value ([Chromatic Aberration](#))**

The term "Abbe value" is named after Ernst Abbe, a German physicist and mathematician who lived in the 19th century. Abbe made significant contributions to the field of optics and is known for his work on the theory of optical imaging and the design of optical instruments.

Contributions to optics, including the development of the Abbe value concept, Ernst Abbe had a lasting impact on the field of optical science and engineering.

16  Lens selection

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#### 17 Lens selection

Abbe value ([Chromatic Aberration](#))

The Abbe value, also referred to as the Abbe number or V-number, is a parameter used to describe the dispersion of optical materials. It quantifies how much the refractive index of a material varies with the wavelength of light. The Abbe value is a measure of the material's ability to disperse different colors of light, indicating how much chromatic aberration will occur in an optical system that uses that material.

#### 18 Lens selection

Abbe value ([Chromatic Aberration](#))

A low Abbe value indicates a high level of dispersion, meaning that the material will cause greater chromatic aberration. Conversely, a high Abbe value indicates low dispersion, resulting in reduced chromatic aberration. The Abbe value is an essential consideration in lens design, as it helps determine the quality and performance of optical systems.

#### 19 Precise measurements

- To ensure proper fit and optimal vision correction, taking precise measurements for eyeglasses is crucial
- Pupil Distance (PD): The PD is the distance between the centers of your pupils. To align the optical centers of the lenses with your eyes.

#### 20 Precise measurements

- Segmented Height: This measurement is necessary for bifocal or progressive lenses, as it determines the correct placement of the near vision segment. It is measured from the bottom of the lens to the center of your pupil

## 21 **Effective Communication**

### **When dispensing eyewear, effective communication with the patient is crucial**

1. Active Listening: Listen attentively to the patient's needs, concerns, and preferences. Ask open-ended questions to gather information and understand their specific requirements.
2. Educate and Explain: Clearly explain different lens options, frame materials, coatings, and other features. Provide information about the benefits and limitations of each option, helping the patient make an informed decision.

## 22 **Effective Communication**

3. Demonstration: Show the patient how to properly handle, clean, and maintain their eyewear. Demonstrate the correct way to put on and remove glasses to ensure a comfortable fit.
4. Frame Selection: Help the patient choose frames that suit their facial features, lifestyle, and personal style. Consider factors like face shape, skin tone, and comfort to ensure a confident and satisfied wearer.
5. Adjustments and Fittings: Make necessary adjustments to the frames to ensure a proper fit. Explain the importance of correct alignment and how it affects visual comfort and clarity.

## 23 **Thorough Quality Control**

1. Visual Inspection
2. Lens Clarity
3. Frame Integrity
4. Coating and Finishing

## 24 **Precise Dispensing and Fitting**

Fit and Comfort:

Ensure that the eyewear fits properly and feels comfortable when worn. Check for any discomfort or pressure points on the nose, ears, or temples.

## 25 **Conclusion**

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### **Thank you**

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