

The background of the slide is a vibrant, high-contrast collage of various optometric instruments. It features several retinoscopes and phoropters, which are used for eye examinations. The instruments are depicted in a stylized, almost abstract manner, with bright colors like red, yellow, and blue dominating the palette. The text is overlaid on this background, providing a professional yet visually engaging context for the topic.

# SUBJECTIVE REFRACTION FOR THE OPTOMETRIC TECHNICIAN

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# AUDITING THE AUDIENCE

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- ▶ Any OMDs here?
- ▶ ODs?
- ▶ Refracting technicians?
- ▶ Scribing technicians?
- ▶ Traditional pretesting technicians?
- ▶ Opticians?
- ▶ Lab techs?
- ▶ Other optometric support staff?

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## GOALS FOR THIS LECTURE AND WORKSHOP

- ▶ I have made some assumptions that since you are here, you are affiliated with and partially familiar with eye care.
- ▶ We will not discuss advanced optics in this lecture but we will discuss some basics and how optics are used to correct refractive error and proper notation
- ▶ You will not learn proficiency of refraction in the short time we are together today but you will have the foundation to continue to learn and practice once back in office.
- ▶ You will be introduced to some new skills that can and will lead to greater efficiency and profitability of your employers practice.

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## MY QUALIFICATIONS TO TEACH YOU HOW TO REFRACT

- ▶ Putting aside the fact that I am professionally trained and licensed to perform refractions, lets look at experience...
- ▶ Graduated ICO in 1995. Started performing refractions in 1992 both in grad school and working in OMD practices
- ▶ 29 years experience.
- ▶ Post grad refractions broken down. Average 15 per day, 5 days a week, 50 weeks a month for 29 years
- ▶  $60 \times 50 \times 29 = 108,750$  refractions give or take a few. I think we are good here



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## MAKING THE CASE FOR OPTOMETRIC TECHNICIANS PERFORMING REFRACTIONS

- ▶ Though optometry has made enormous strides in expanding our scope of practice, refraction is still its lifeblood. But as our scope of practice has expanded and many optometric practices are based more on a medical model, seeing as many if not more pathology cases during the day than refractive, there is an argument that delegation is in the best interest of efficiency and profitability.



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# A CASE FOR OPTOMETRIC TECHNICIANS PERFORMING REFRACTIONS BASED ON PATIENT FLOW AND FINANCIAL HEALTH OF THE PRACTICE

- ▶ Let's look at patient flow. The average refraction should take no more than 5 minutes. With a schedule of 23 patients a day with 2/3 of those requiring refraction. This equals 75 minutes of the day. We book every 30 minutes for appts that require refractions as standard of care. Having a refracting technician take over the non-essential refractions frees up valuable chair time for the optometrist to care for another patient. If a clinic can schedule an additional two patients a day that decreases patient back log and increases revenue.
- ▶ Medical care averages 150.00 per encounter
- ▶ Refractive care averages 250.00 per encounter
- ▶ 2 more encounters x 5 days x 50 weeks equals 75,000 medical / 125,000 refractive additional revenue
- ▶ 2 more encounters a day decreases the scheduling back log if based on 4 weeks by 2 full schedule days



# ANOTHER CASE FOR TECHNICIANS PERFORMING REFRACTIONS AND OTHER HANDS ON TASKS

## DURING PATIENT EXAMINATION

### ▶ Physician burn-out

- ▶ There are many definitions and many isolated triggers but from my experience and studies it comes down to a degradation of personal satisfaction with life experience revolving around the profession.
- ▶ This can occur with *perceived* or real lack of support from staff and a feeling of having to micro manage every aspect of the practice. This can be due to improper training, lack of delegation or at worst *perceived or real* employee apathy within the physician's support structure.
- ▶ Patient apathy and lack of respect for the services provided to them. One example is the lack of concern for the well being of the physician, her or his family and support staff by not respecting COVID related precautions.
- ▶ During the COVID pandemic, I personally found myself changing my attitude from one of gratitude that patients chose me to care for them to one of ***I am a valuable resource to you and your well being. You should protect me and my well being so that I am available to care for you.***
- ▶ I had the same conversation with my staff more than once. PROTECT ME. I am here for you and your family. Please guard my well being at every opportunity.



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- ▶ How does this relate to "refraction"?
  - ▶ By having support staff perform some of the repetitive, less necessary yet expected tasks within the examination allows the physician/optometrist to use vital time and mental resources to foster relationships and facilitate quality care to patients.
  - ▶ By having refractionist, scribes helping with documentation or just a tech in the room to help with patient flow and to assist with tasks that are more time consuming, the quality of experience in patient care becomes more manageable and even enjoyable and less likely to lead to a daily in office negative experience.
  - ▶ In summary, take some weight off your doc so she/he is fresh and available at their best for patients and employees.



# WHICH PATIENT ENCOUNTERS ARE PERFECT FOR TECHNICIAN REFRACTION?

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- ▶ It is a fact that older patients purchase fewer glasses. Many of these patients have already had cataract surgery which stabilizes the refractive state. These patients purchase glasses on average every 4 years.
- ▶ One week cataract post operative visits require refractions but ultimately glasses are not prescribed from these measurements. We do not RX lenses until the one month appt at which time the refraction is performed again.
- ▶ Any established, non contact lens patient that upon documentation of chief complaint reveals that they are not interested in updating their glasses this year. i.e. "my insurance does not cover this year, I'm very happy with my current glasses and prescription"
- ▶ Not that these patients do not deserve the best care possible, but when maximizing the optometrists time, performing a detailed refraction is not always necessary under these circumstances. I think of it as triaging. Those in greatest need receive the attention required.



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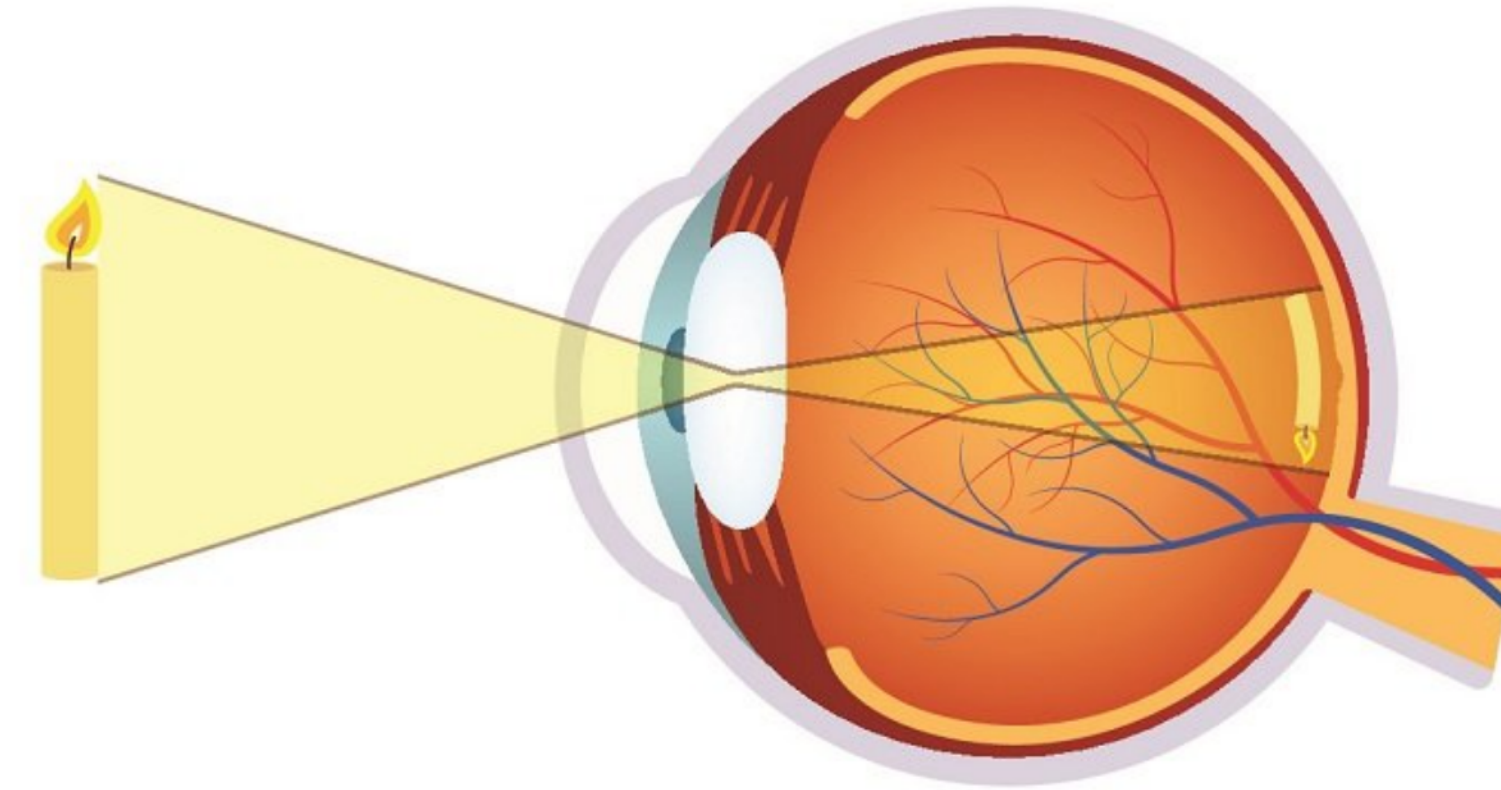
# WHAT IS REFRACTION?

- ▶ MY DEFINITION: THE PROCESS IN WHICH A CLINICIAN MEASURES A PERSON'S NATURAL REFRACTIVE STATE IN ORDER TO ACHIEVE THE BEST POSSIBLE VISUAL ACUITY.
- ▶ REFRACTION CAN BE PERFORMED UTILIZING DIFFERENT DEVICES/TECHNOLOGY BUT FOR THIS CLASS WE ARE GOING TO FOCUS OUR ATTENTION ON THE TRADITIONAL OR MANUAL REFRACTOR/PHOROPTER.
- ▶ PHOROPTER WAS COINED IN 1921 AS A TRADEMARK AS A SHORTENED VERSION OF PHORO-OPTOMETER.
- ▶ THE TERMS PHOROPTER AND REFRACTOR ARE SYNONYMOUS IN MOST CLINICAL SETTINGS AND CAN BE USED INTERCHANGEABLY.

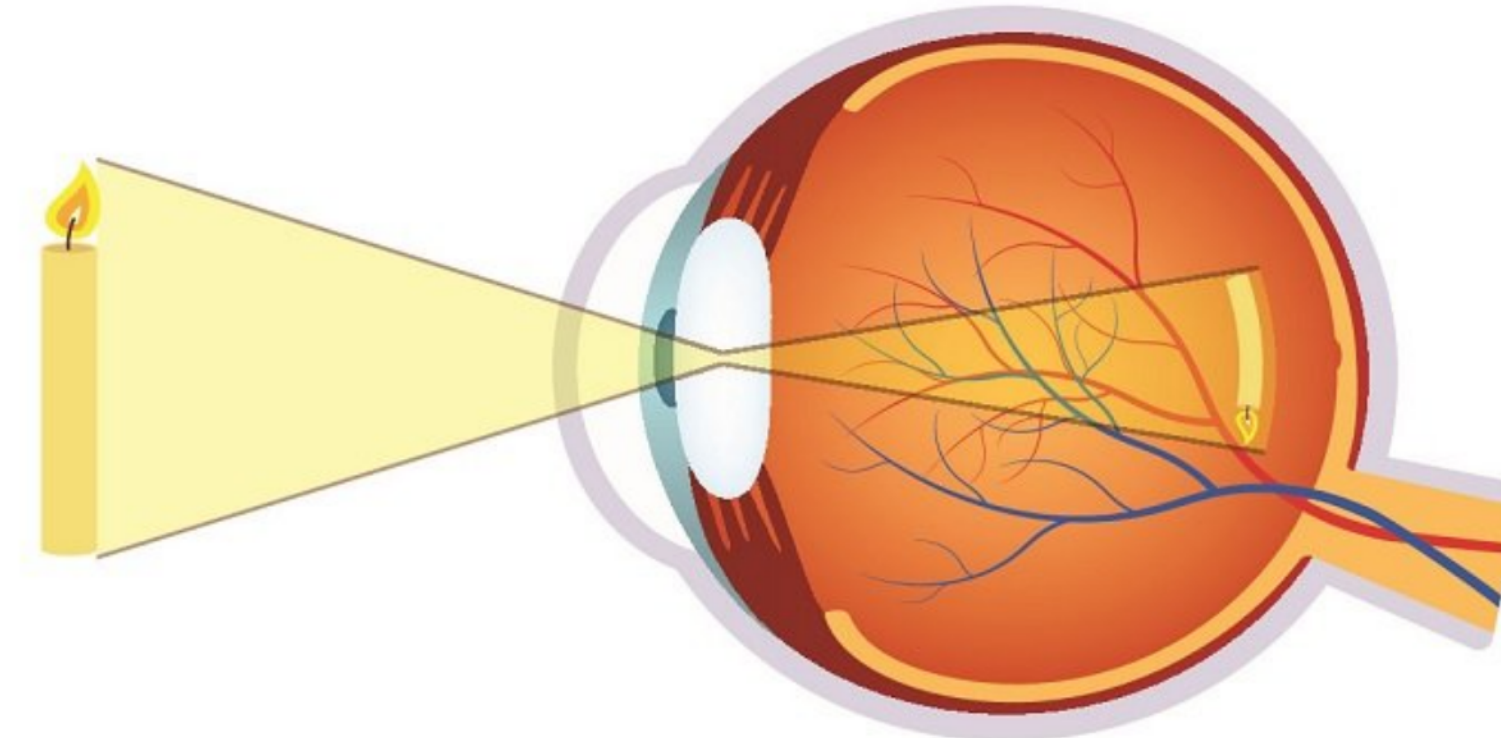


## MYOPIA / NEARSIGHTEDNESS

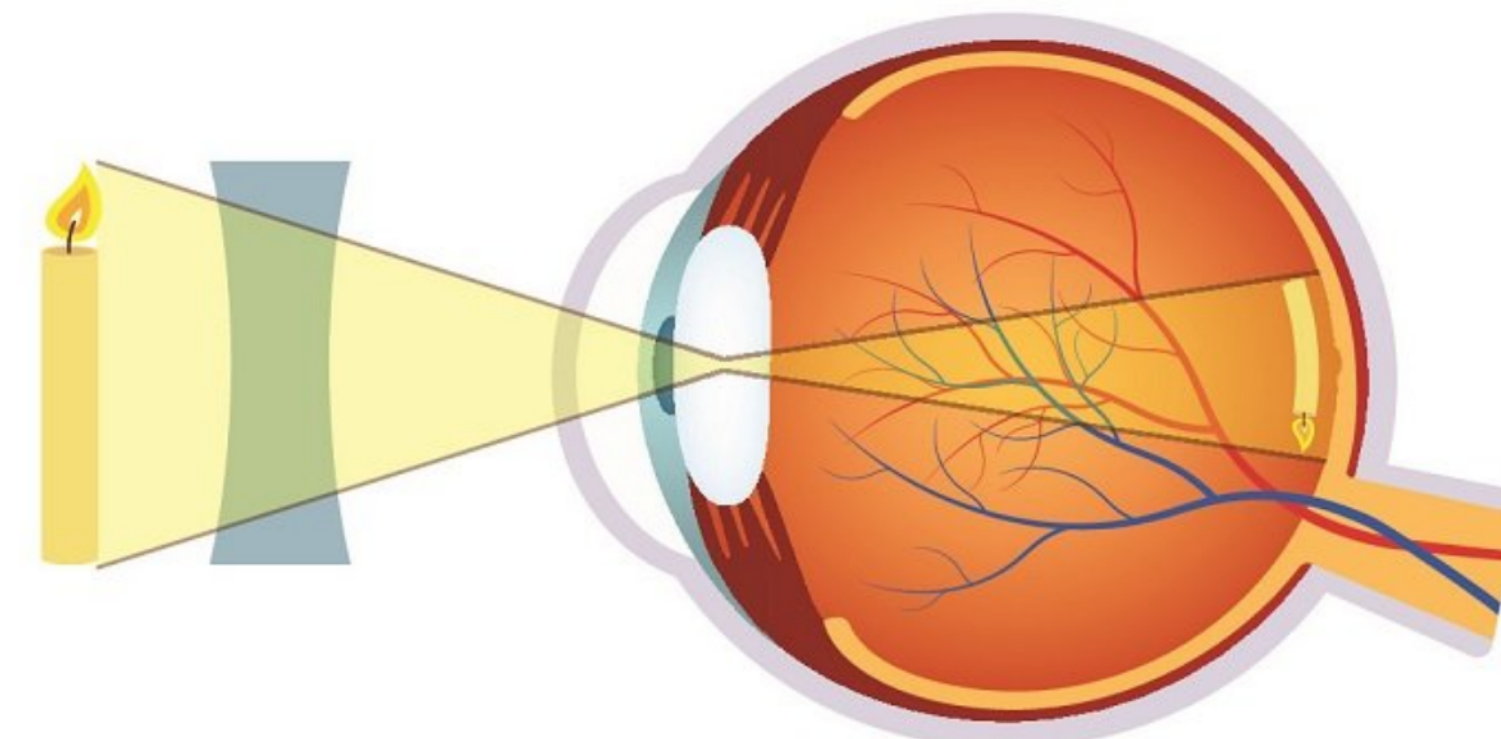
- ▶ THE REFRACTIVE STATE THAT OCCURS WHEN THE OCULAR AXIAL LENGTH IS TOO LONG FOR THE RADIUS OF CURVATURE OF THE CORNEA. THIS RESULTS IN PARALLEL LIGHT RAYS TO FOCUS "IN FRONT" OF THE RETINA GIVING NEAR OBJECTS MORE CLARITY THAN FAR ONES.
- ▶ OPTICALLY CORRECTED WITH A MINUS POWER LENS ( - )



Normal vision



Myopia

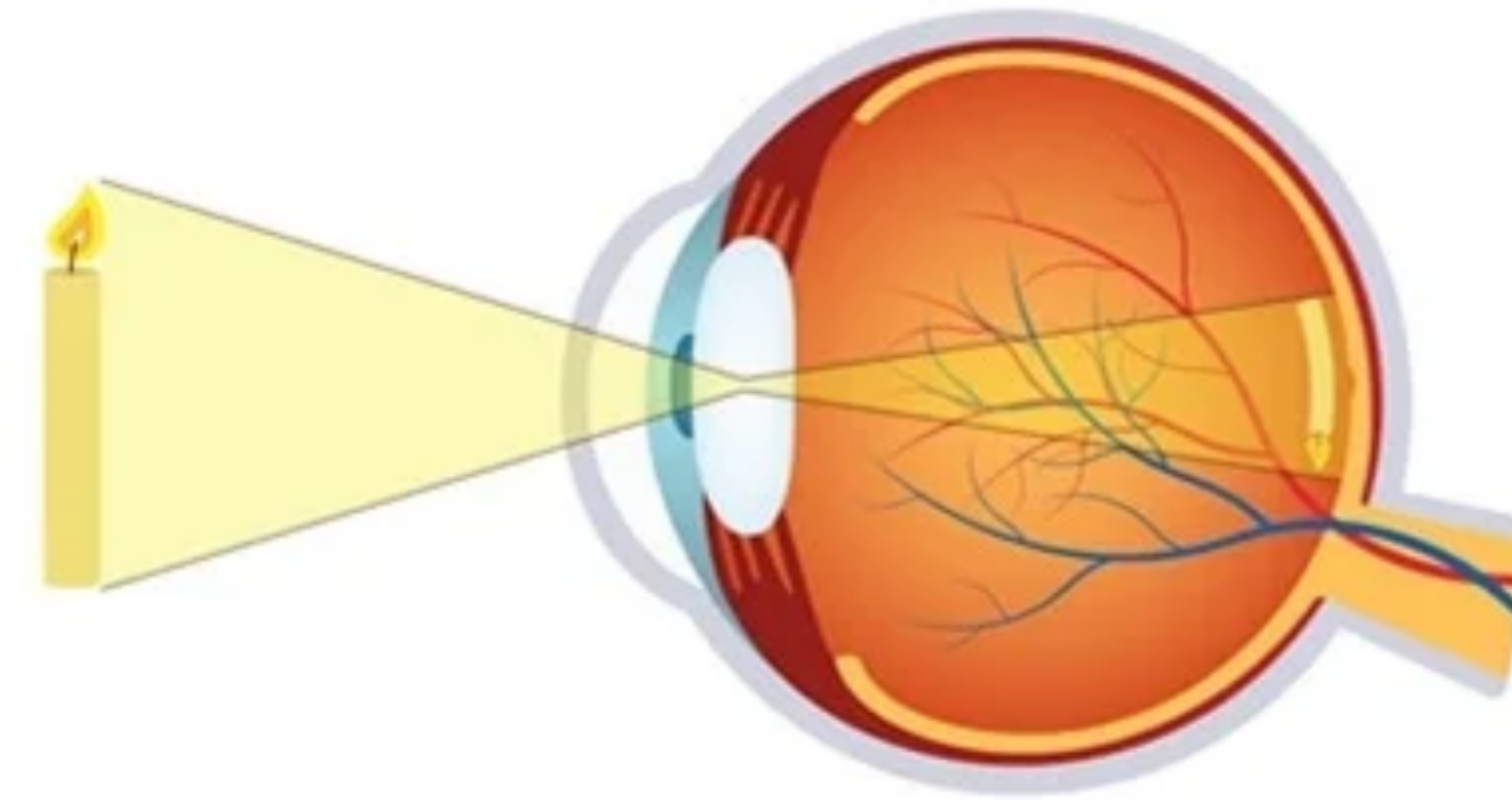


Correction with lens

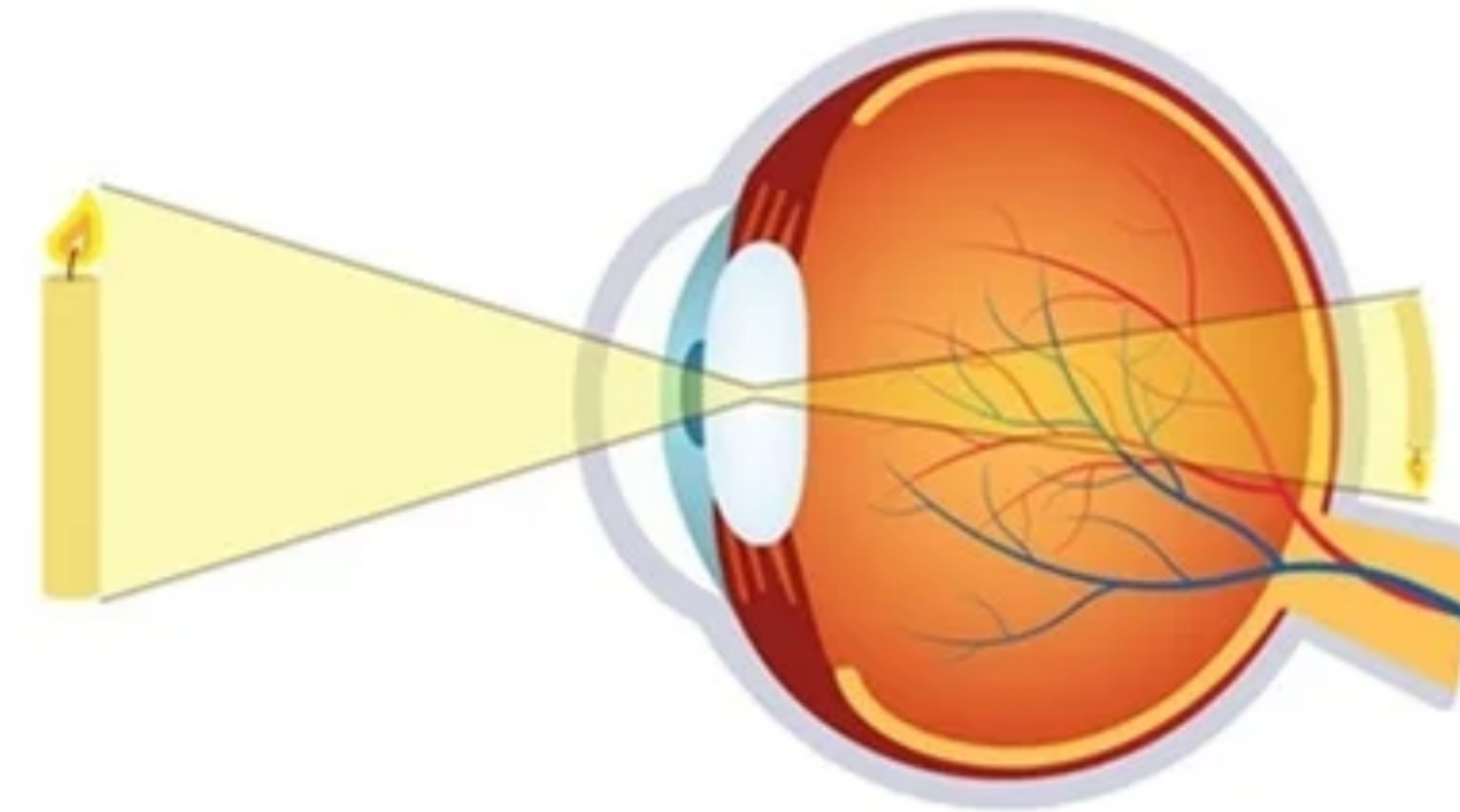


## HYPEROPIA / FARSIGHTEDNESS

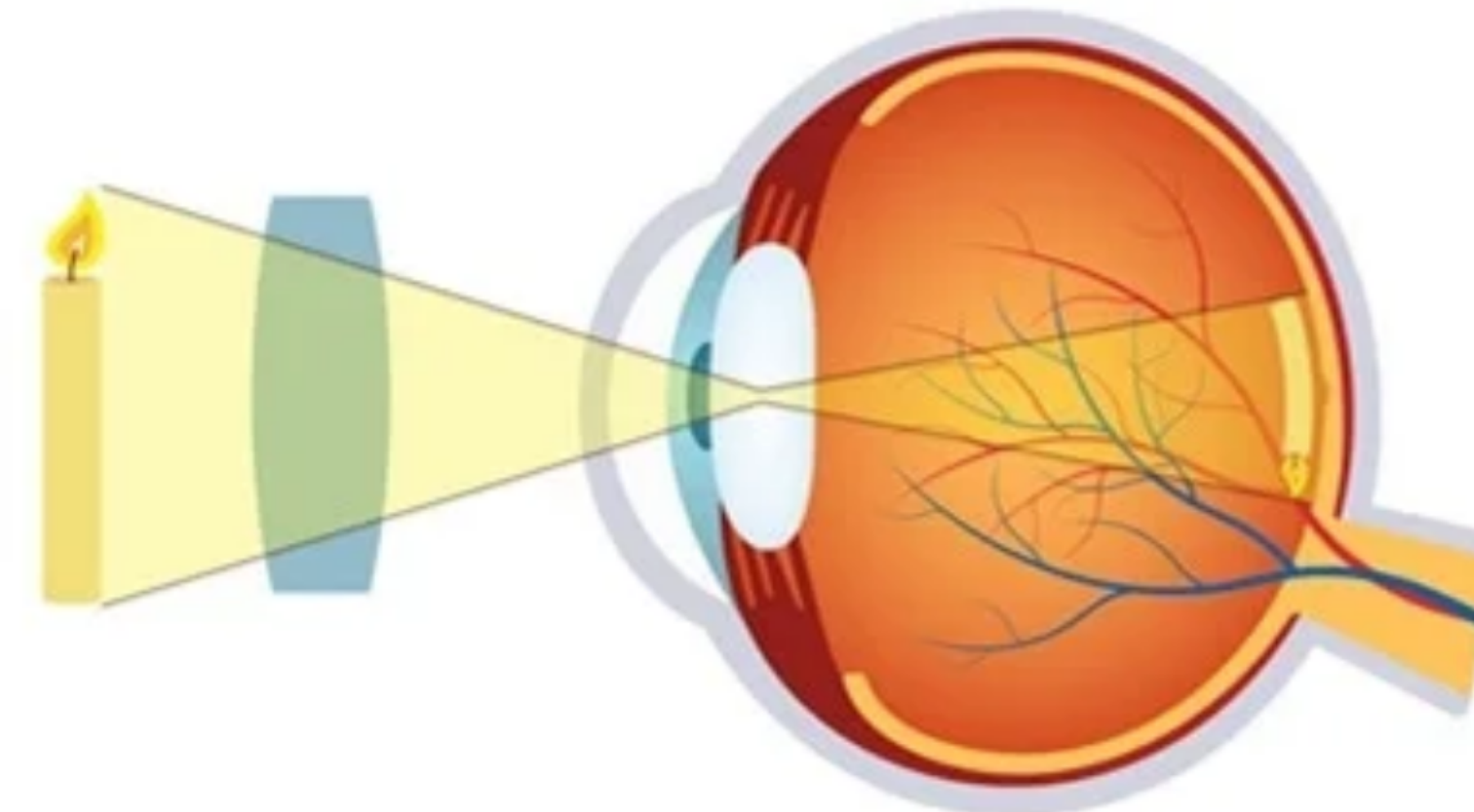
- ▶ THE REFRACTIVE STATE THAT OCCURS WHEN THE OCULAR AXIAL LENGTH IS TOO SHORT FOR THE RADIUS OF CURVATURE OF THE CORNEA. THIS RESULTS IN PARALLEL LIGHT RAYS TO FOCUS "BEHIND" THE RETINA GIVING DISTANCE OBJECTS MORE CLARITY THAN NEAR ONES.
- ▶ OPTICALLY CORRECTED WITH A PLUS POWER LENS ( + )



Normal vision



Hyperopia



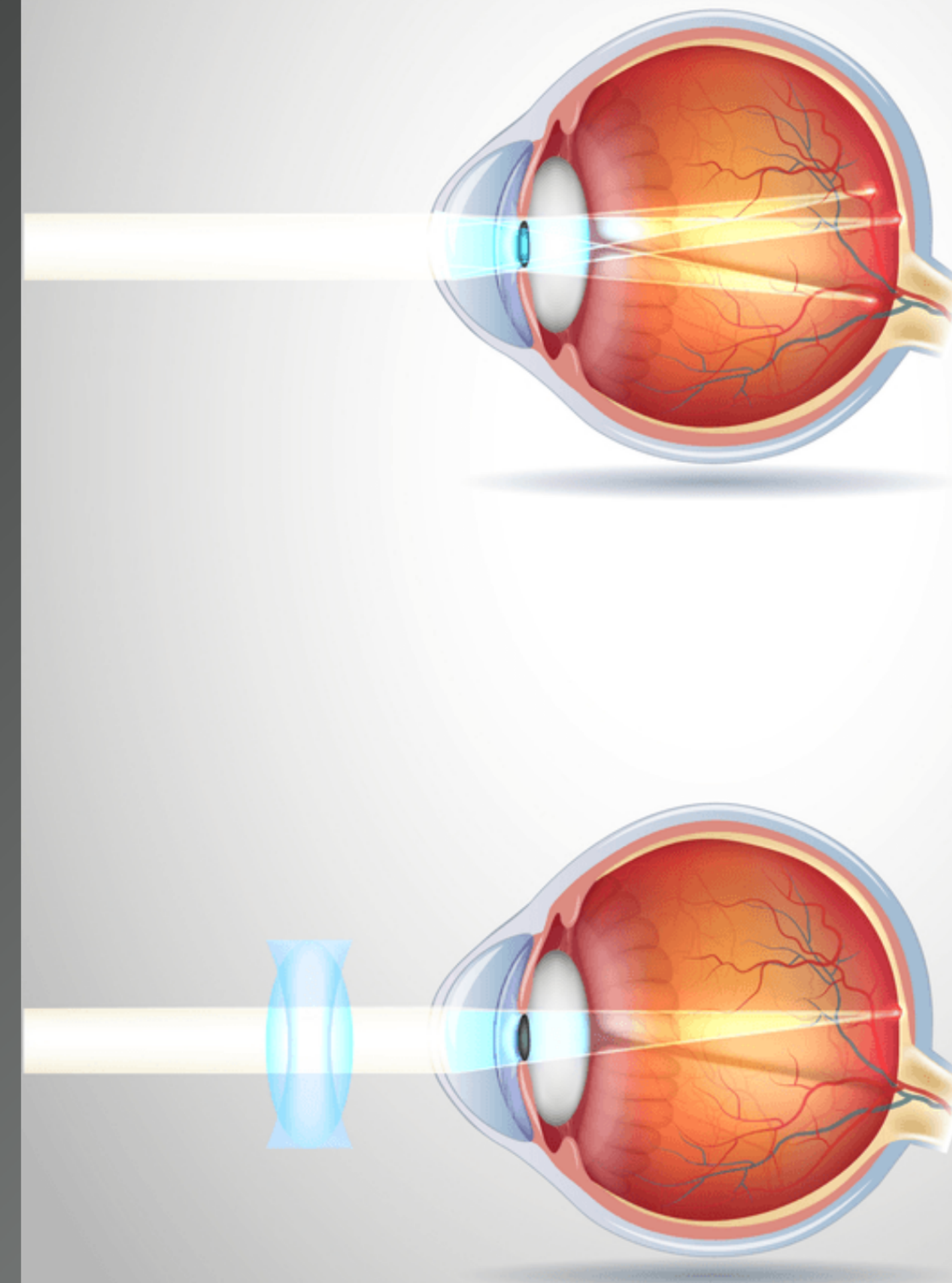
Correction with lens



# ASTIGMATISM

- ▶ THE REFRACTIVE STATE THAT OCCURS WHEN THE RADIUS OF CURVATURE OF THE CORNEA AND/OR THE CRYSTALLINE LENS ARE ASYMMETRICAL. THIS RESULTS IN PARALLEL LIGHT RAYS FOCUSING IN A COMBINATION OF BEHIND AND IN FRONT OF THE RETINA. NEITHER DISTANCE NOR NEAR OBJECTS WILL APPEAR CLEAR.
- ▶ OPTICALLY CORRECTED OPTOMETRICALLY IN MINUS CYLINDER FORM ( - )  
OPHTHALMOLOGY USES PLUS CYLINDER FORM ( + )

## ASTIGMATISM CORRECTED BY A CYLINDRICAL LENS





# DIOPTER

A UNIT OF REFRACTIVE POWER THAT  
IS EQUAL TO THE RECIPROCAL OF  
THE FOCAL LENGTH (IN METERS) OF  
A GIVEN LENS.