

# Diabetes, Hypertension, and Heart Disease: How Do They Affect the Eye?

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# Disclosures and Disclaimers

- **Dr Lorraine Snead:**

I have the following relevant financial relationship with a commercial interest: I am a public relations and marketing consultant for OnSite Vision Plans, Inc.

- **Dr Edward Berger:**

I have the following relevant financial relationship with a commercial interest: I am the President of OnSite Vision Plans, Inc.

- **Disclaimer Statement:**

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# Educational Objectives

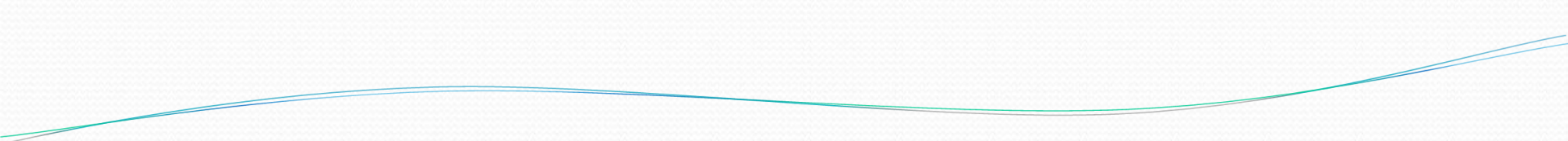
- **Describe** the ocular symptomatology of diabetes, hypertension and heart disease.
- **Discuss** the clinically visible signs of the ocular manifestations of diabetes, hypertension and heart disease.
- **Examine** the current treatment modalities of diabetic eye disease, hypertensive retinopathy and heart disease - related ocular pathology.



## **Today's format:**

**First, the ocular symptoms of these diseases will be discussed so they are better understood by the practitioner when an inmate talks. In other words,**

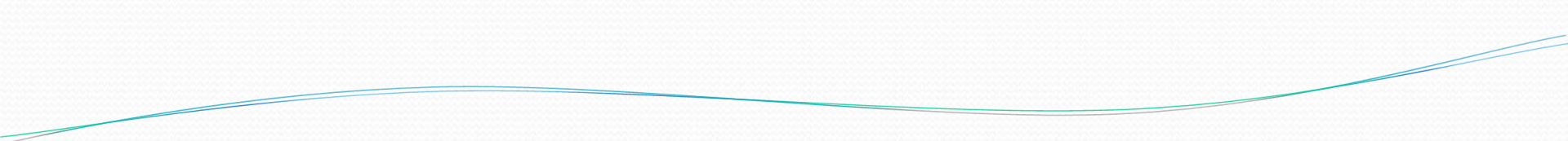
**WHAT CAN YOU HEAR?**



**This will be followed by an explanation of the clinically visible ocular signs of the disease so that the practitioner can identify what is going on with the eyes. In other words,**

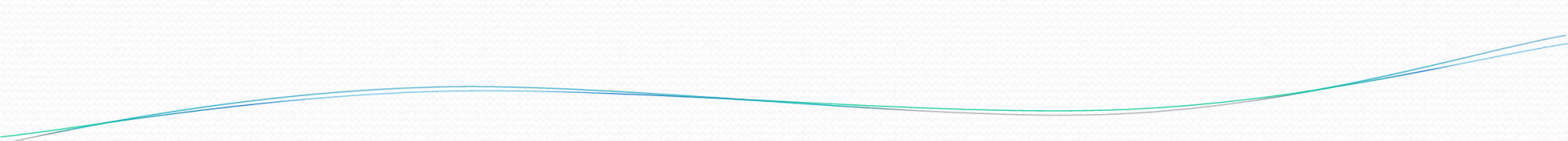
**WHAT DO YOU SEE?**



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**Lastly we will talk about current treatments- what they are and when they are used for best visual outcome. In other words,**

**WHAT CAN BE DONE?**



**It has been said that the eyes are the window to the soul, but today we are here to discuss that the eyes are also a window to:**

- 1. Our overall health.**
- 2. The many systemic diseases that manifest themselves in the eye.**





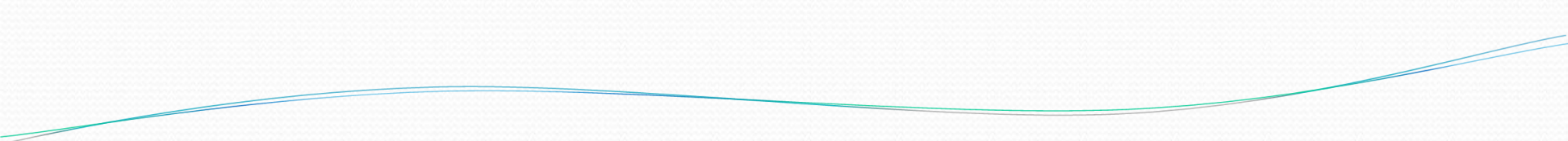
# **What makes eyes special?**

**The eyes are the only place in the body where one can see the live action of blood vessels, nerves and connective tissue without relying on an invasive procedure.**





**Let's start with diabetes...**



**What do the numbers  
34 million, 96 million and  
the number one  
mean to you?**

# According to the World Health Organization and the CDC

- 34 million Americans have diabetes.
- 96 million have what is called pre-diabetes(either abnormally high blood sugar or cannot control their blood sugar)
- and lastly, #1...





**Diabetes is the #1  
cause of blindness in  
the United States.**



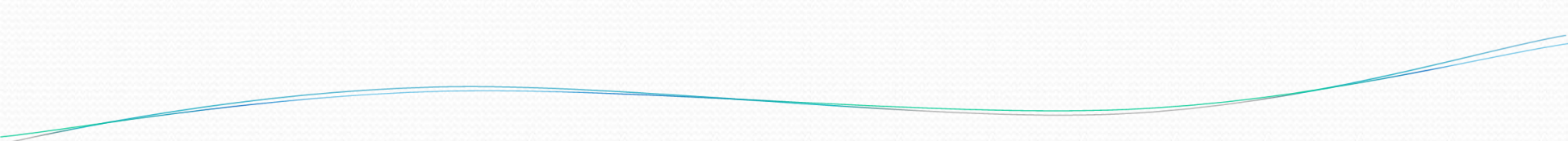
**“My vision gets blurry then  
clears up and then gets blurry  
again.”**

**“My glasses are wrong.”**

# Fluctuating vision

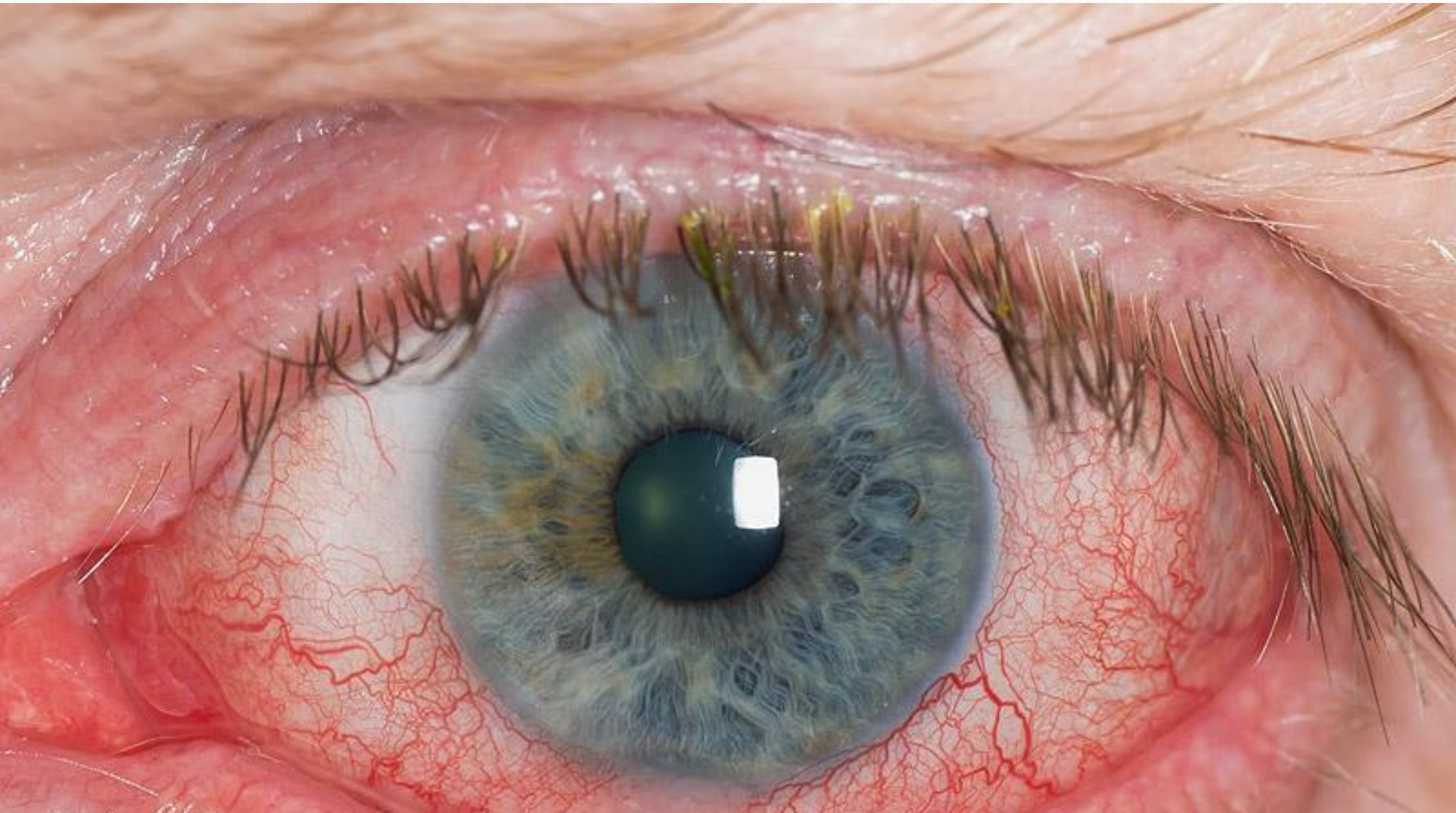






**“My eyes burn, especially at  
the end of the day.”**

# Dry Eye







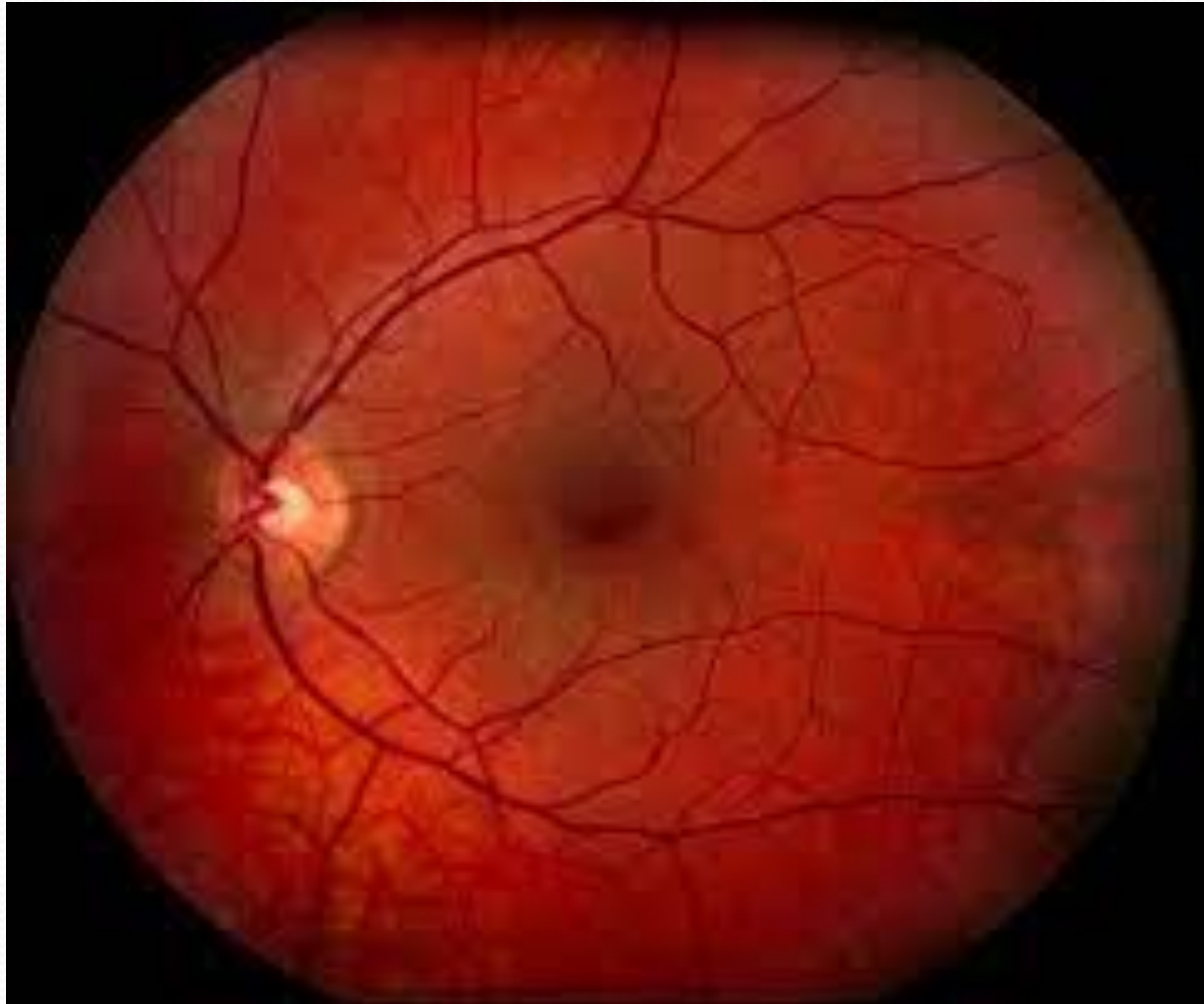
**“My eyes are getting worse.  
It has been harder and harder to  
see in the last six months.”**



# Cataract



# Normal Retina







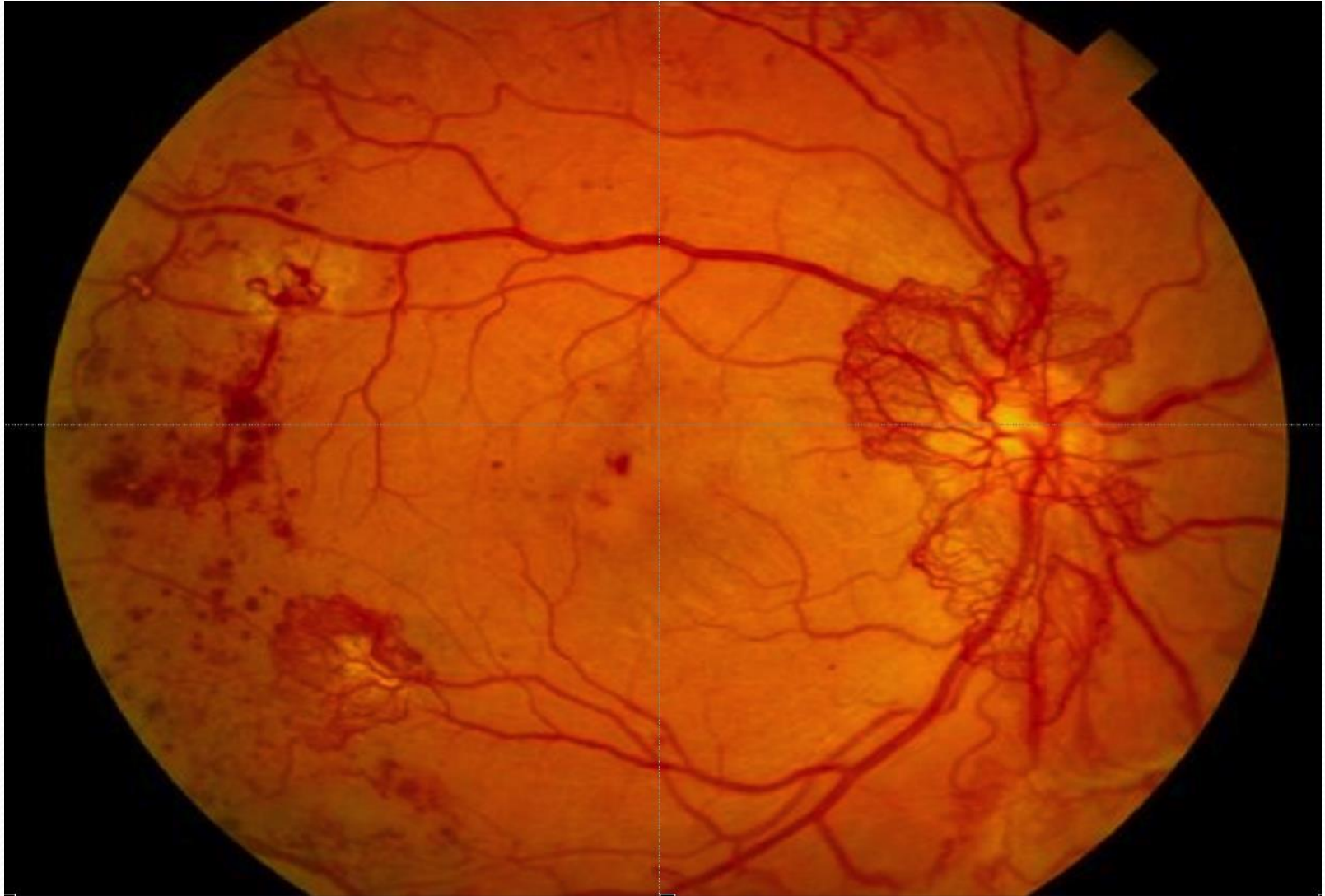
**“The last few days my vision is kind of weird or distorted and I can’t read any more.”**



# Diabetic Macular Edema



# Severe PDR



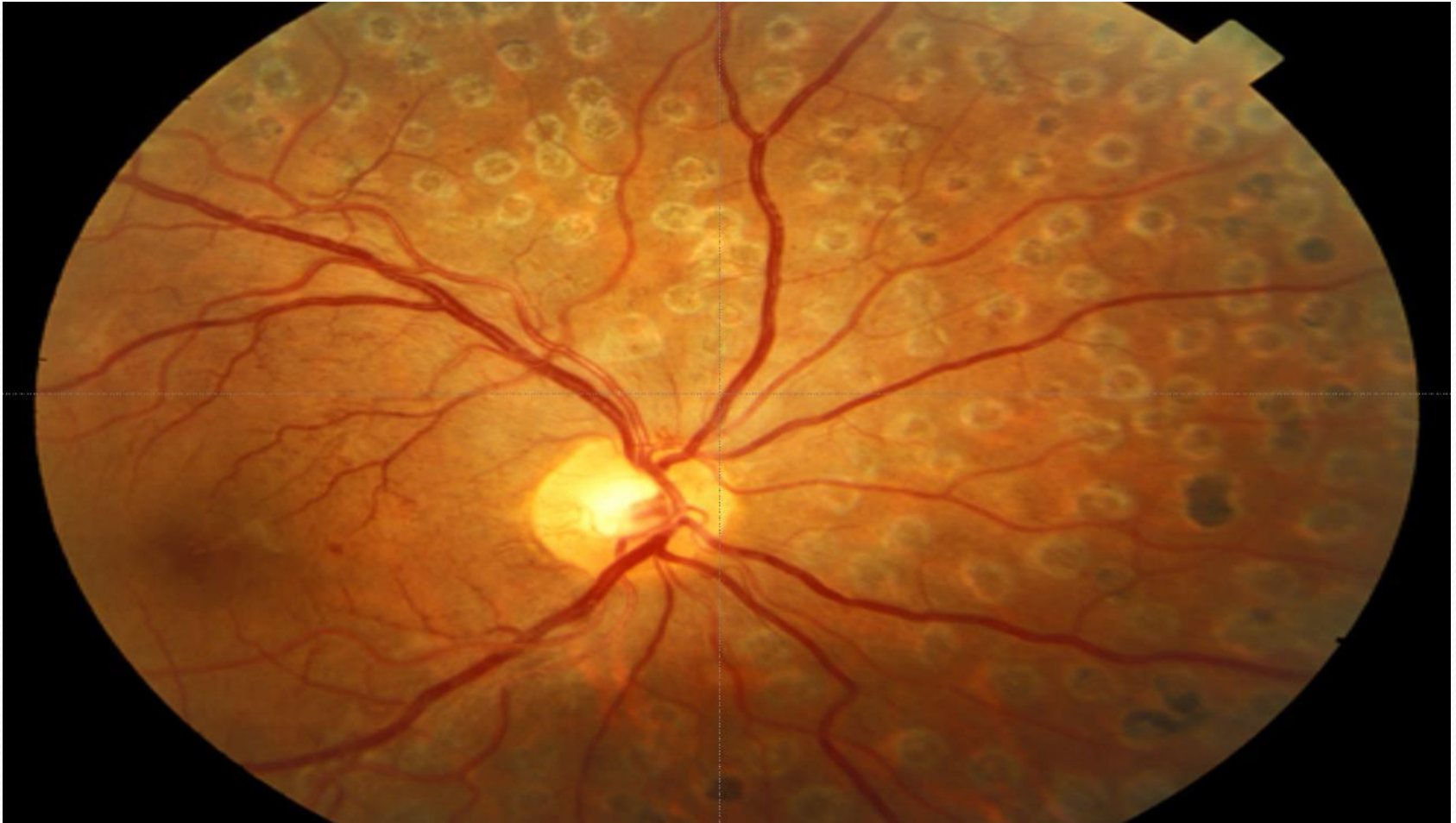




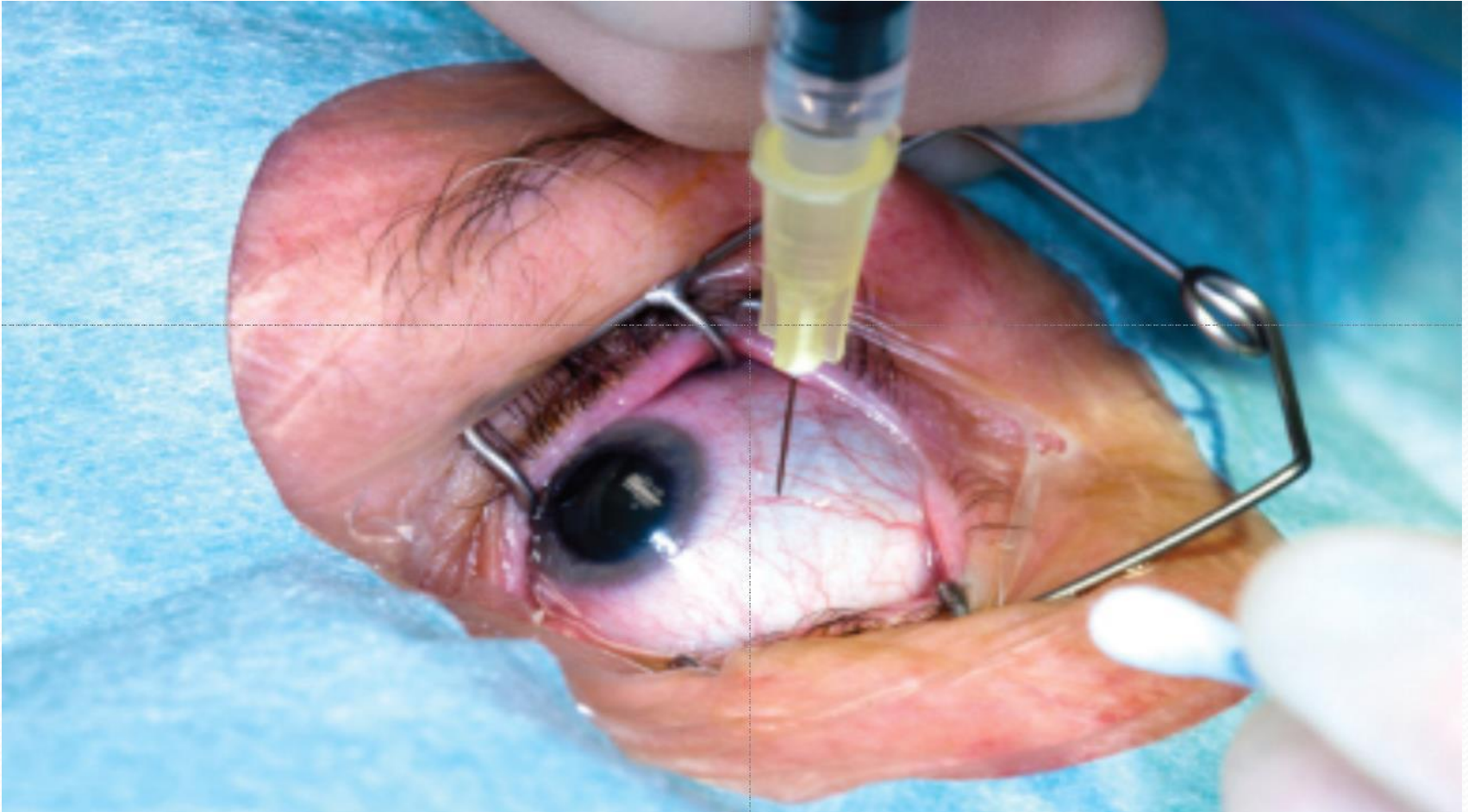
**What can be done to help  
preserve this patient's sight?**



# PRP

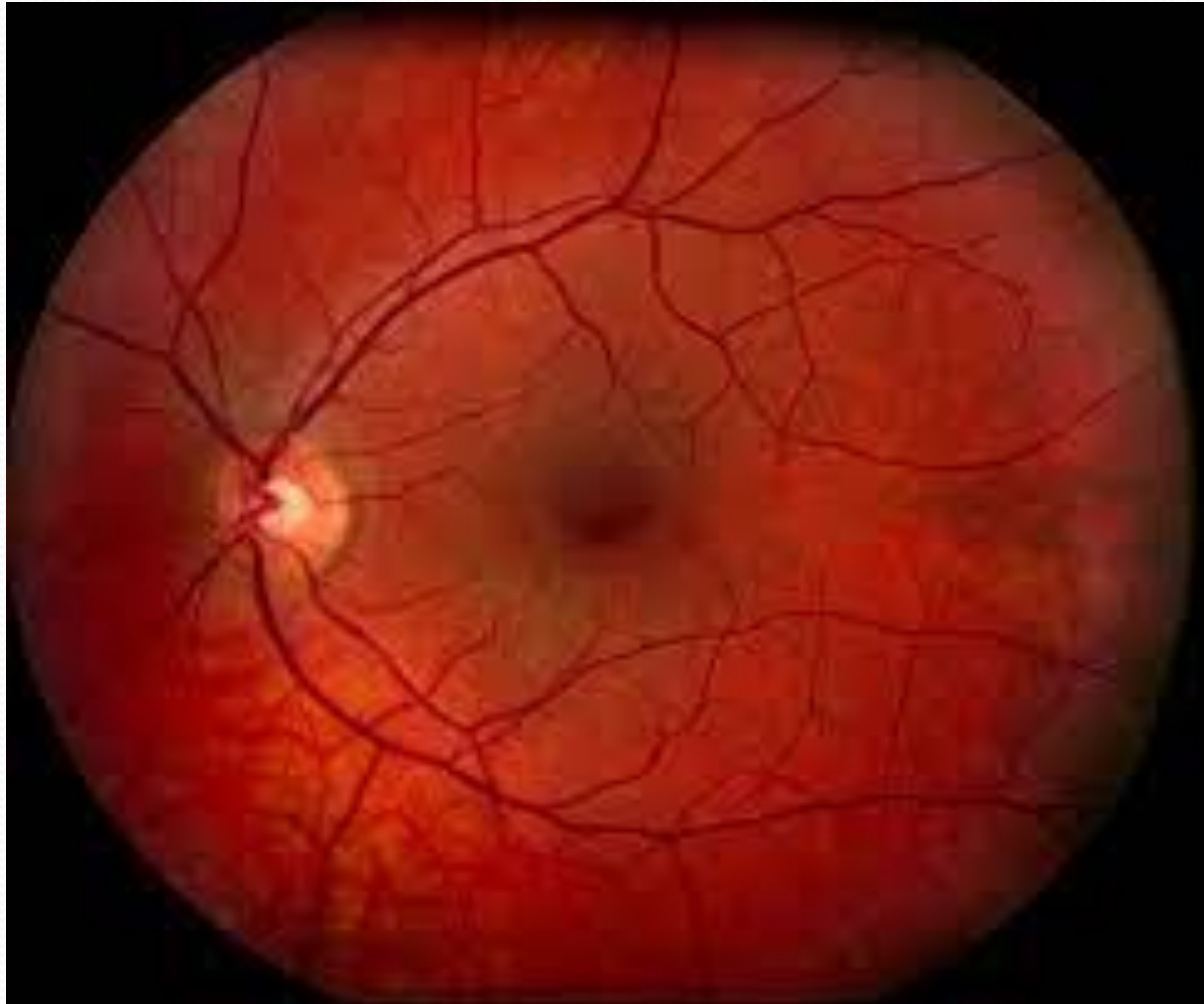


# Anti VEGF Treatment

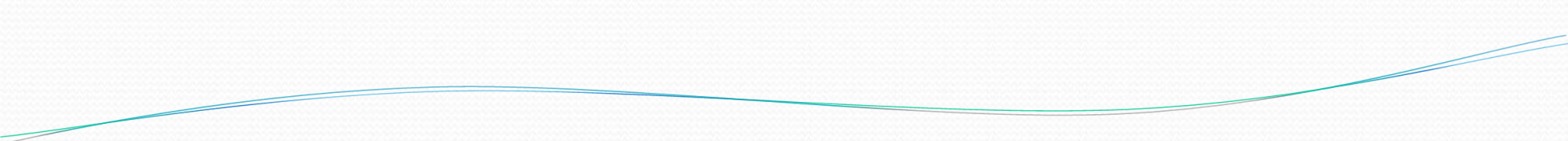




# Normal Retina







**“All of a sudden I see spots.  
A lot of them.  
Sometimes flashing lights or  
lightning streaks too.  
And they are not going away.”**

# Diabetic Retinal Detachment



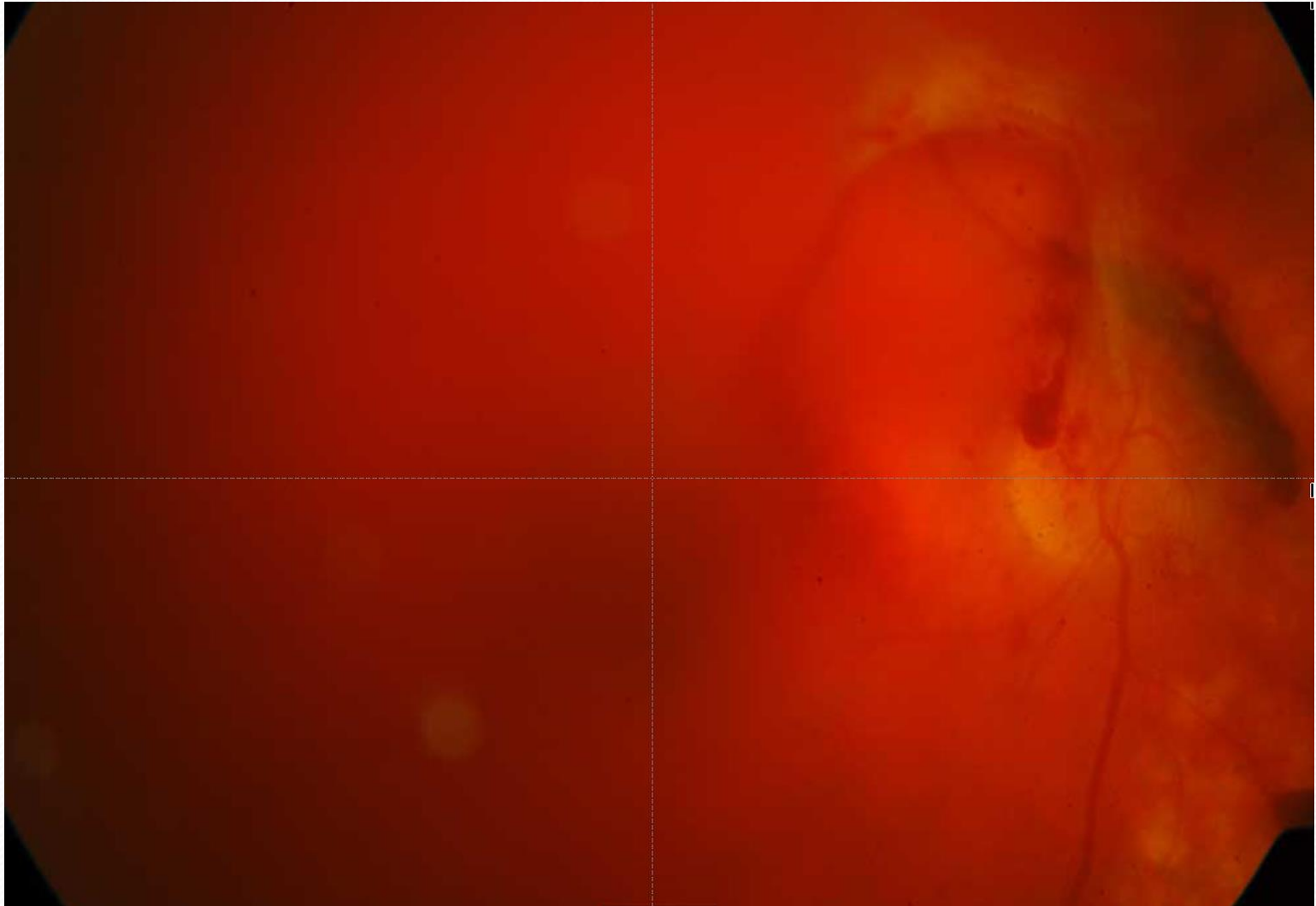


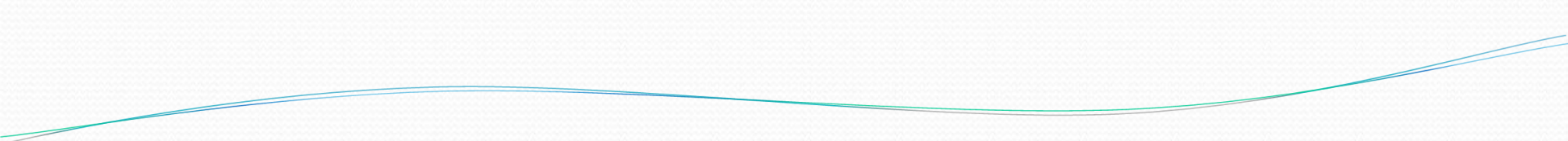


**“I can’t see. It’s all black.”**



# Diabetic Vitreal Hemorrhage





**“I see double when I look  
to the left (or to the right).  
That’s never happened  
before.”**



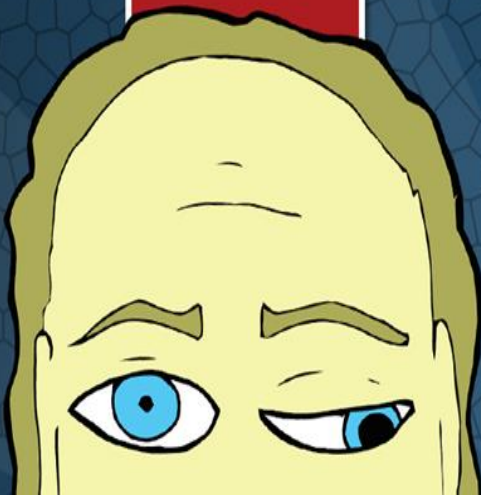
# Cranial Nerve Palsies

**THIRD**

vasculopathic

tumor

aneurysm



**FOURTH**

vasculopathic

tumor

congenital  
trauma



**SIXTH**

vasculopathic

tumor

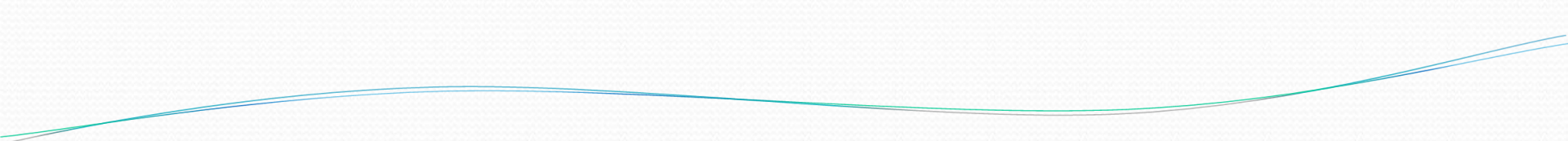
cranial pressure





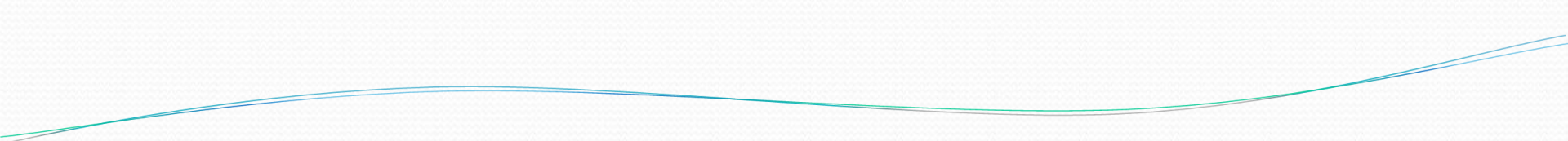


# Hypertension and the Eye



**According to the CDC,  
65% of US adults 60 or older  
have hypertension.  
Most are asymptomatic.**





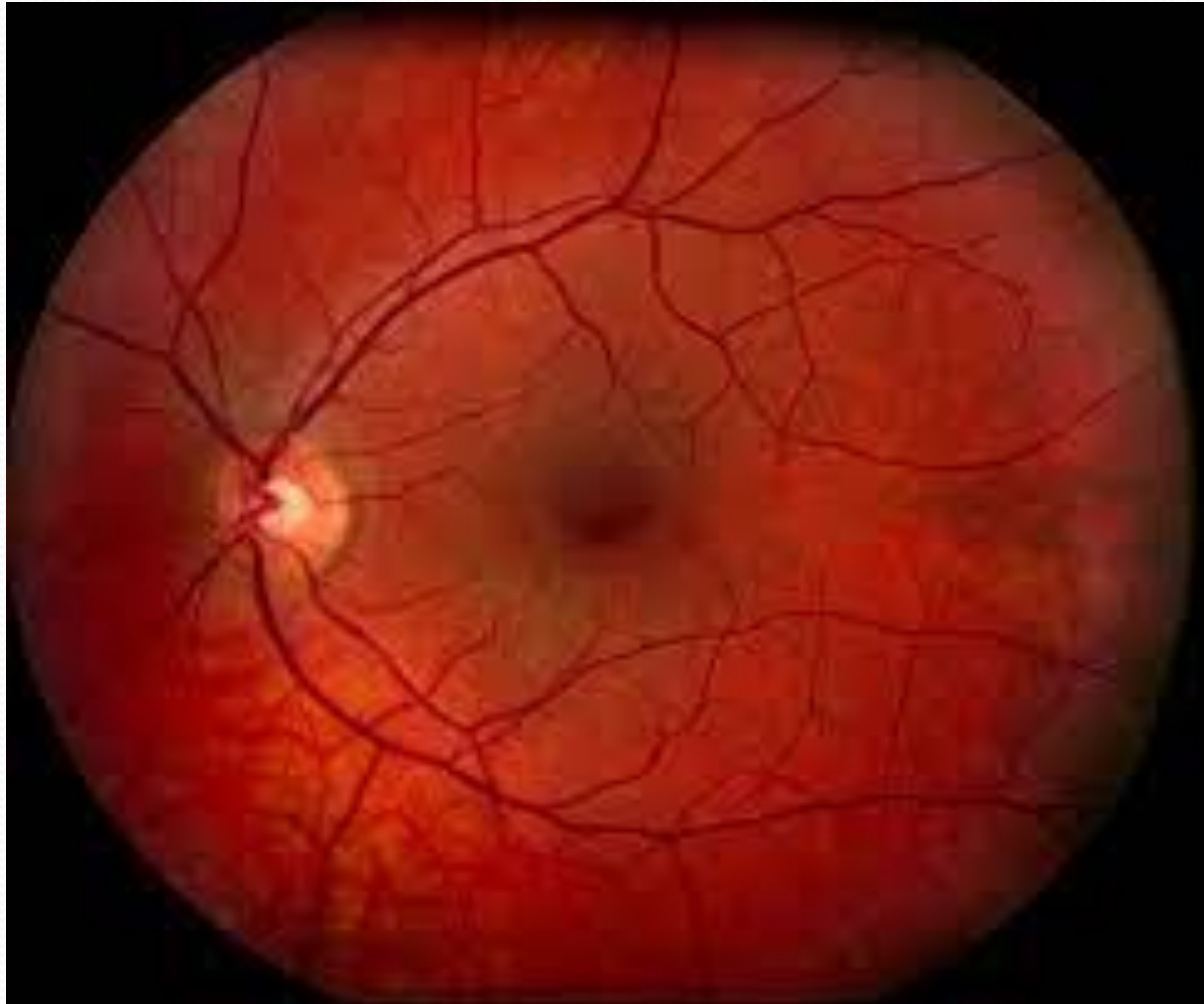
**“Nah, it doesn’t hurt.  
And I didn’t poke myself.  
But why is my eye bleeding?”**

# Subconjunctival Hemorrhage





# Normal Retina

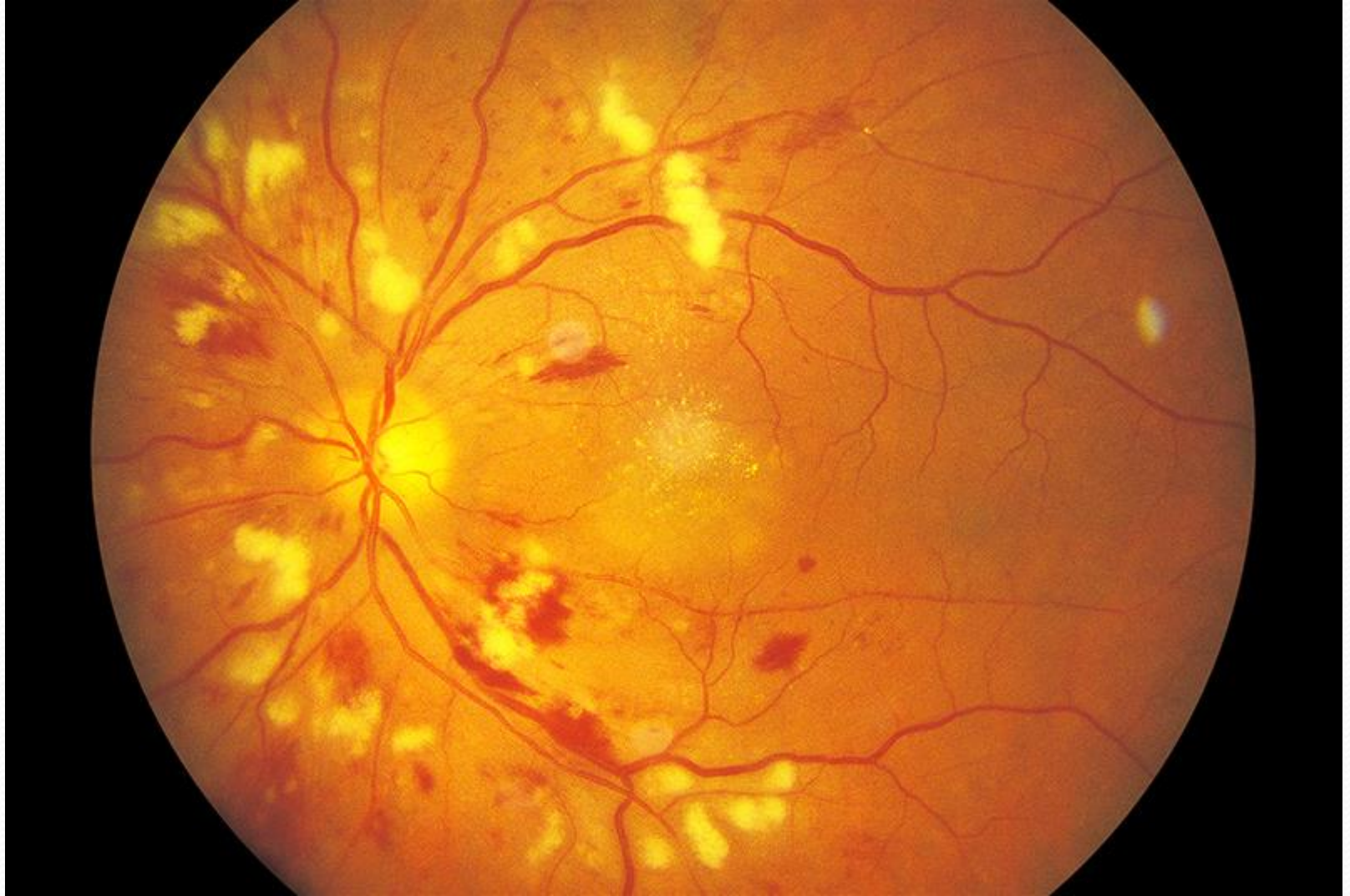




**“Just need an eye check  
up, probably new glasses.”**



# Hypertensive Retinopathy





**“Part of my vision is blurry, like I’m looking through water.”**

**Alternatively, no symptoms at all (!)**



# Branch Vein Occlusion



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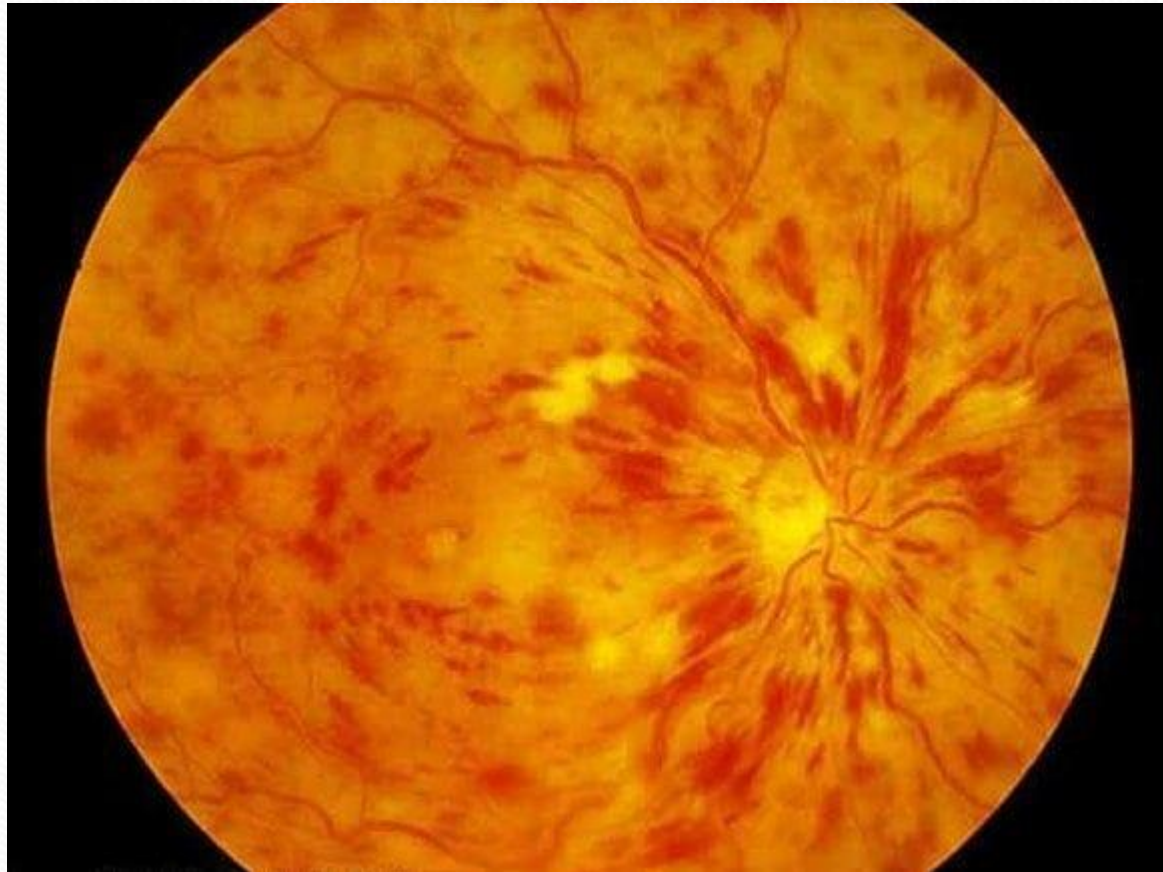
**“I see spots.”**

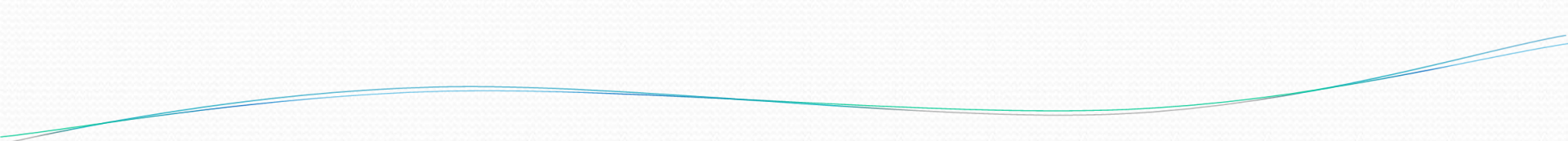
**Alternatively: “My vision is blurry and it is getting worse by the hour.”**

**Alternatively: “My vision is gone.”**



# Central Retinal Vein Occlusion

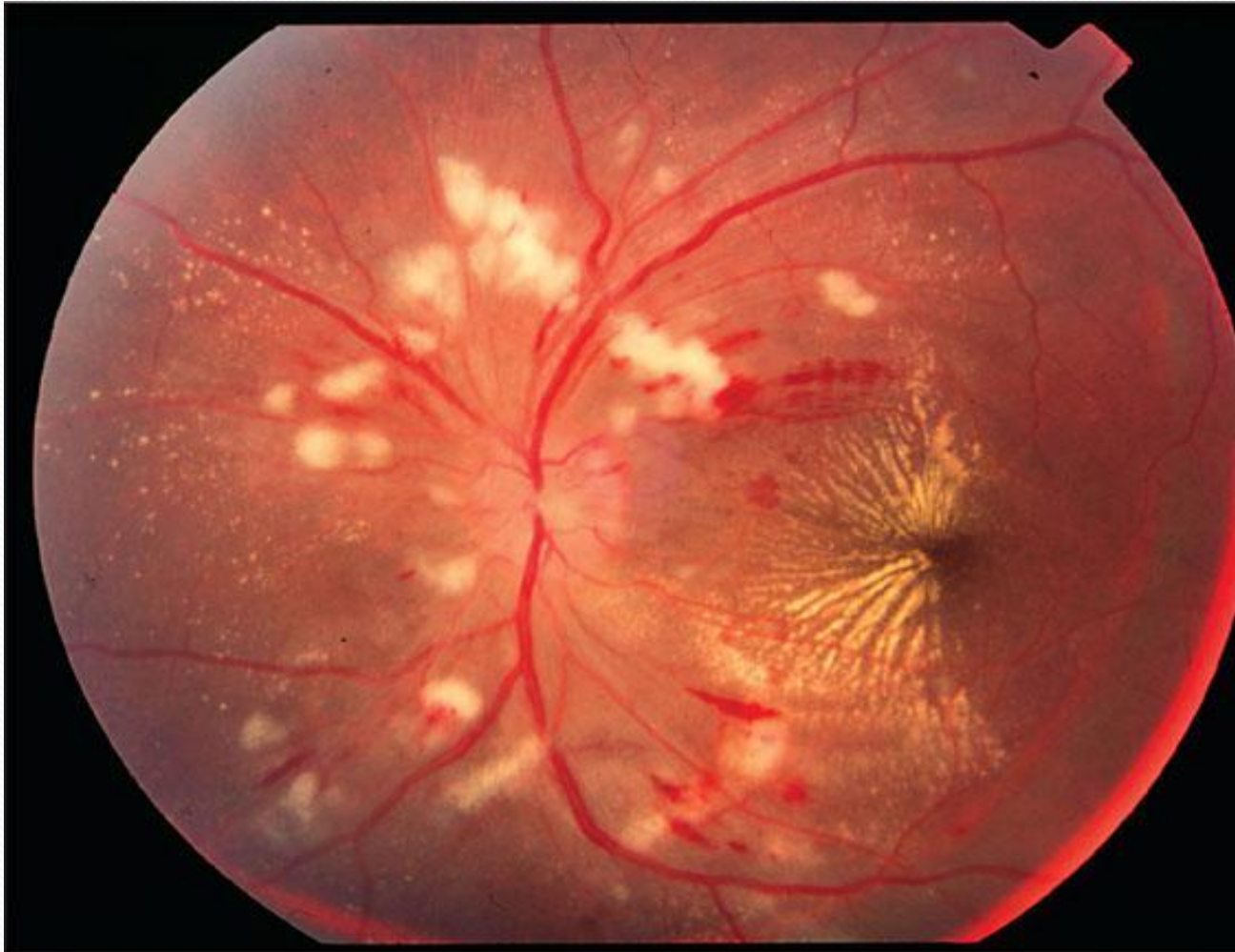




**“My vision is blurry, kind of double, and I have a bad headache.”**



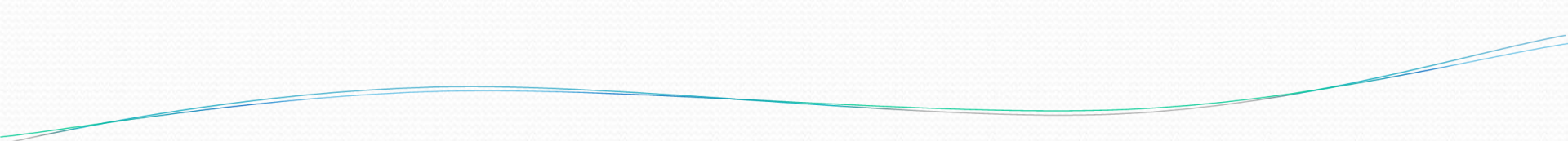
# Malignant Hypertension





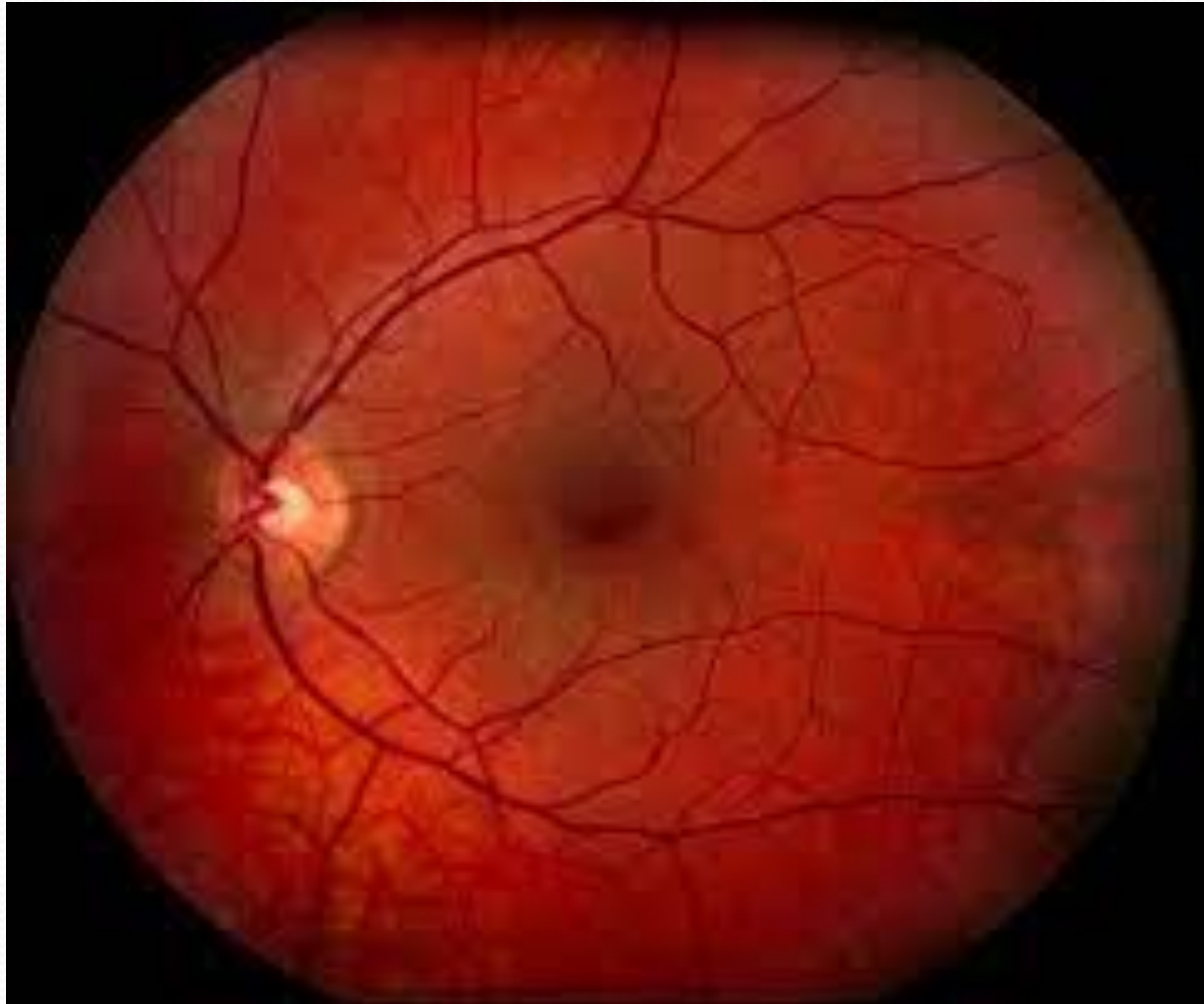
# Heart Disease and the Eye





**Every year heart disease kills more Americans than any other medical condition. Cardiovascular disease (ischemic heart disease) is also the number one cause of death worldwide.**

# Normal Retina



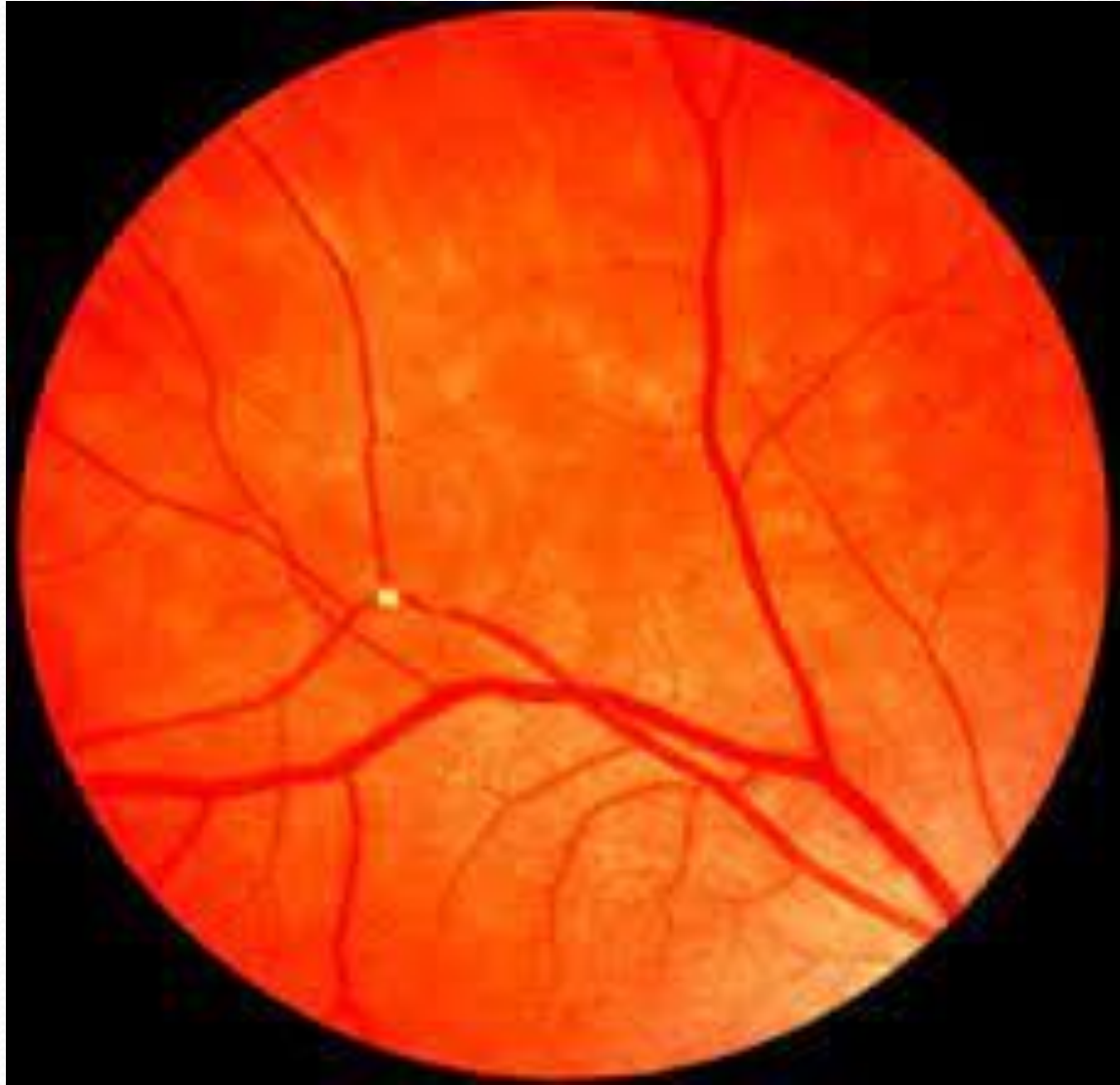




**Inmate:**

**No symptoms of note.**

# Hollenhorst Plaque

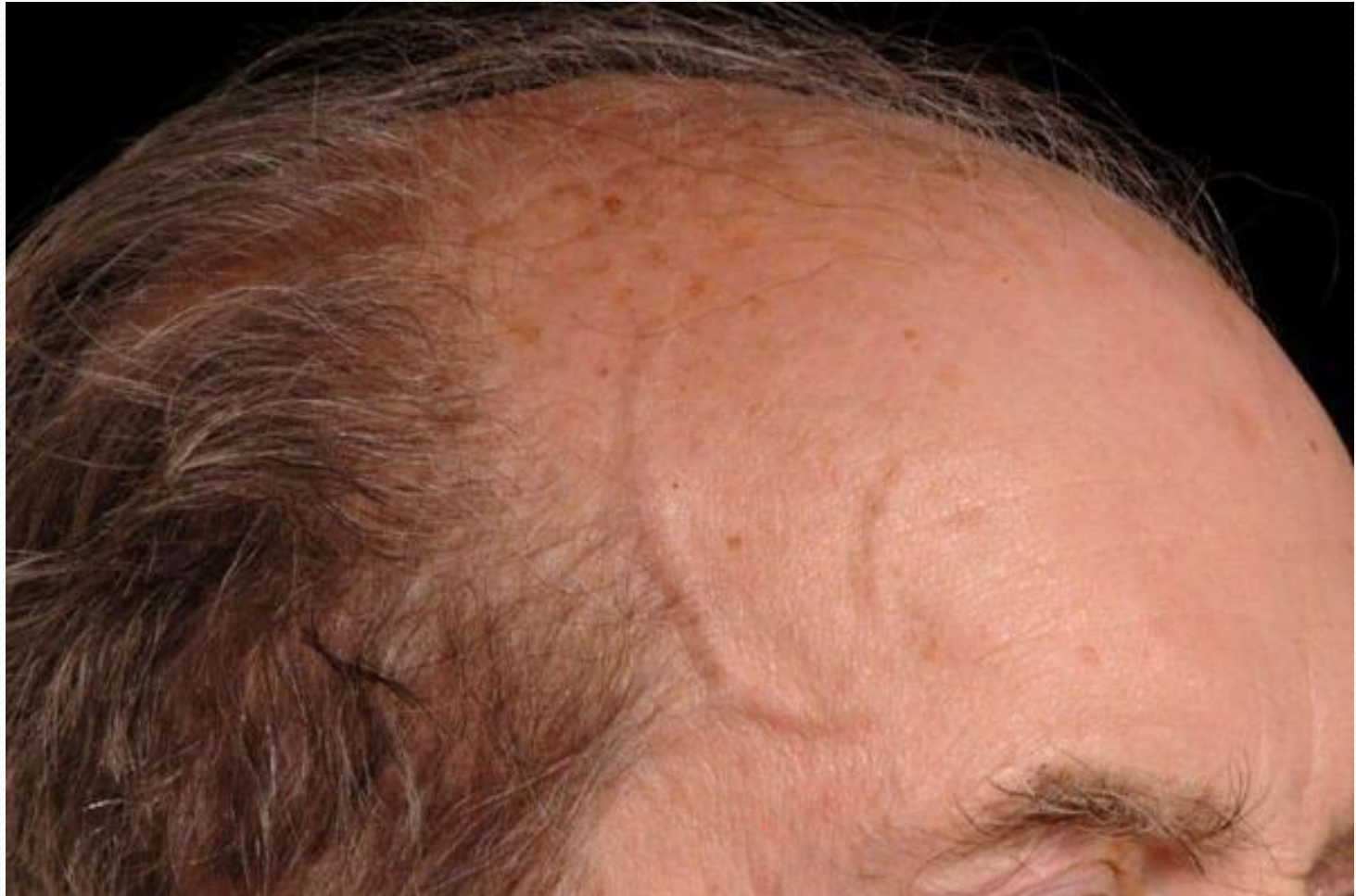






**“My vision keeps going dim then coming back. It also hurts when I comb my hair or chew.”**

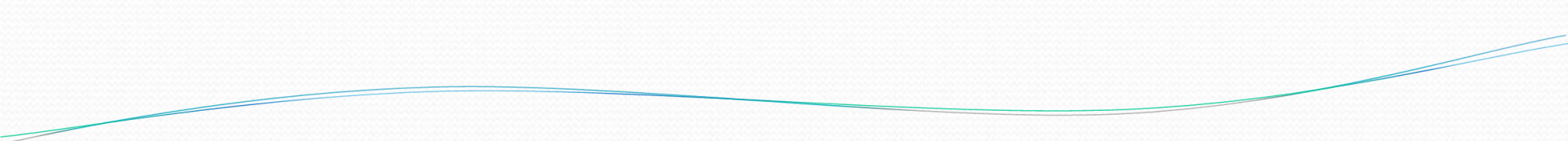
# Pronounced Temporal Artery





# Giant Cell Arteritis





**The ability to recognize,  
differentiate, and manage the  
presentation of these diseases  
can preserve sight, quality of  
life, and even life itself.**



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**Thank You  
and  
Safe Travels**