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### Objectives

<p><b>Differentiate</b></p>	<p><b>Interpret</b></p>	<p><b>Counsel</b></p>
<p>Distinguish clinical features of Non-Proliferative (NPDR) vs. Proliferative (PDR) disease, focusing on the specific complications that drive vision loss.</p>	<p>Master the use of retinal imaging modalities—specifically Fundus Photography, Optical Coherence Tomography (OCT), and Fluorescein Angiography (FA)—to stage and monitor disease.</p>	<p>Apply patient-centered strategies to discuss modifiable risk factors (BSL control) and the “silent” nature of early progression to improve visual outcomes.</p>

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### Diabetic Retinopathy: growing global epidemic

**Leading cause of vision loss**  
 worldwide for patients aged 25-74

**700 Million**  
 people projected to have diabetes by 2045

Global DM Population  
 1/3 of Global DM patients have DR  
 1/3 of those have vision-threatening DR

©CDC, Section 12

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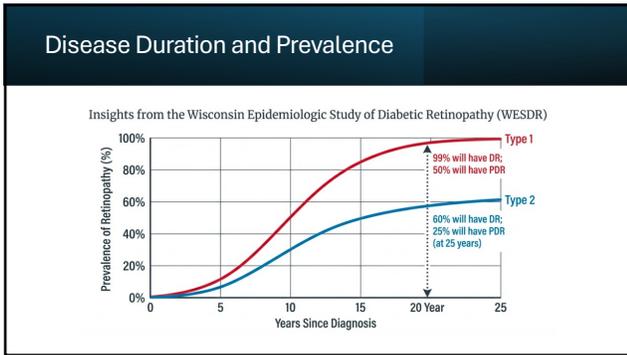
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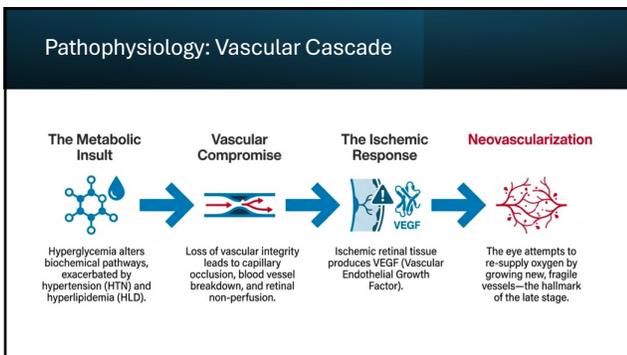
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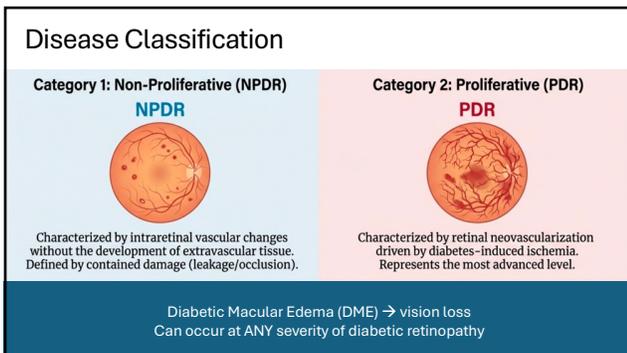
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## Non-Proliferative Diabetic Retinopathy (NPDR)

**Mechanism:**

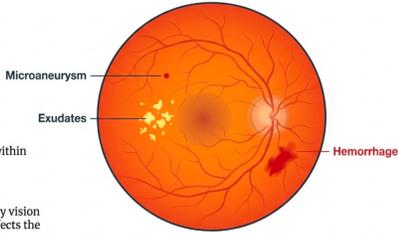
'Leaky' vessels cause retinal swelling;  
'closed' vessels cause macular ischemia.

**Clinical Signs:**

- **Microaneurysms:** Capillary wall breakdown.
- **Exudates:** Tiny particles/lipid deposits forming in the retina.
- **Hemorrhages:** Dot/blot hemorrhages within the retina.

**Symptomology:**

Often asymptomatic in early stages. Blurry vision occurs if DME is present or if ischemia affects the macula.




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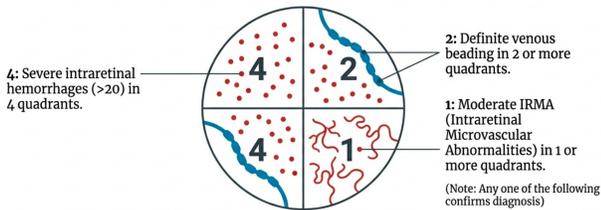
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## Diagnosing Severe NPDR: 4-2-1 Rule



Importance: Identification of patients at greatest risk of progression to PDR

Prognosis: 15% and 60% risk of progression to high-risk PDR within 1 and 3 years, respectively.

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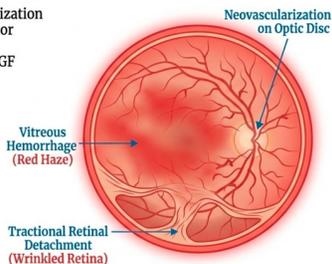
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## Proliferative Diabetic Retinopathy (PDR)

- **Definition:** The presence of neovascularization (new blood vessel growth) on the retina or optic disc.
- **Mechanism:** Driven by high levels of VEGF produced by ischemic tissue.

**Complications:**

- **Vitreous Hemorrhage:** Fragile vessels bleed into the jelly of the eye (causing floaters or total vision block).
- **Tractional Retinal Detachment:** Scar tissue from new vessels pulls the retina off the back of the eye.
- **Neovascular Glaucoma:** Abnormal vessels block fluid drainage.




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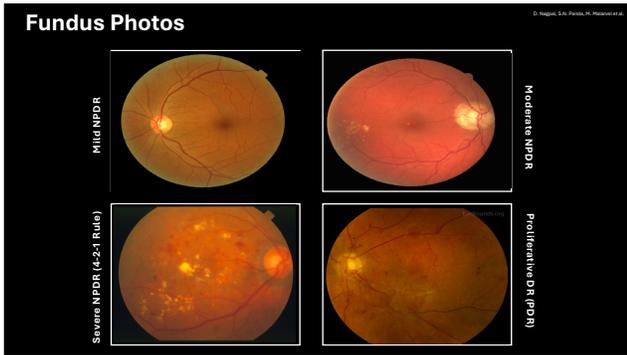
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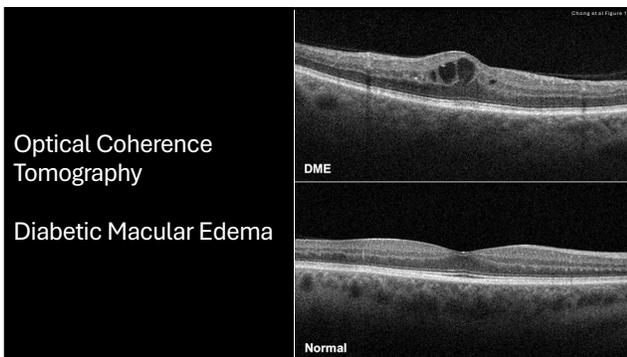
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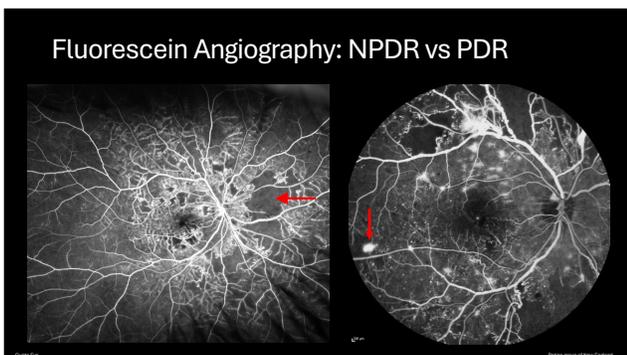
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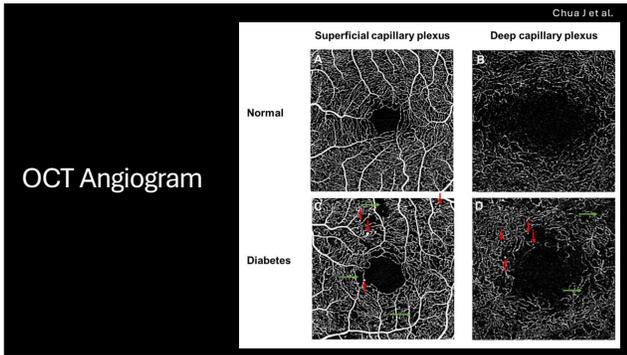
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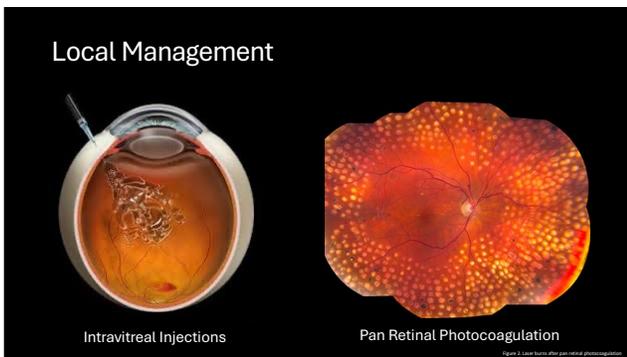
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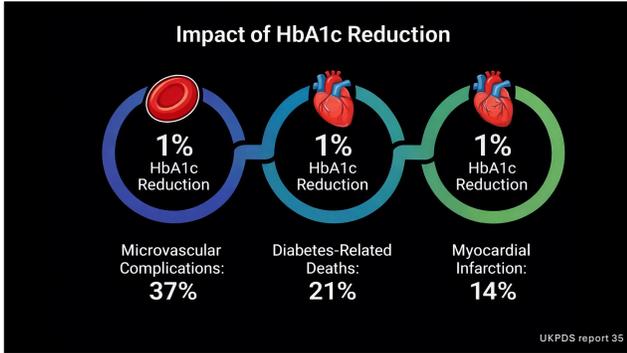
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### Communication and Prevention

- **The Silent Phase:** Emphasize that early diabetic retinopathy often has NO symptoms, making screening vital
- Control blood sugar (PCP/endocrinologist coordination)
- Manage blood pressure and lipids
- Adhere to scheduled dilated eye exams (staged-based follow up)
- Report vision changes immediately

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