



Retinopathy of Prematurity (ROP):
uncontrolled proliferation of retinal blood vessels in premature infants which may lead to blindness. Common in NICU settings!

PRESENTATION	
<ul style="list-style-type: none"> Red reflex in all neonates: look for leukocoria (white pupil) Screen for ROP in neonates with risk factors: ≤30 weeks GA, birth weight <1500 g, systemic stressors (ex. hypoxemia, supplemental O₂) 	SCREENING
	<p>Dilated retinal examination by an ophthalmologist</p> <ul style="list-style-type: none"> If < 28 weeks GA: screen at 31 weeks corrected If ≥ 28 weeks GA: screen at 4 weeks of age Classify by zone (location) + severity

PATHOPHYSIOLOGY

Timeline of retinal maturation

- 16 wks GA: vessels emerge from optic disc
- 36 wks GA: vessels reach nasal edge of retina
- 9-10 months GA: vessels reach full 360°

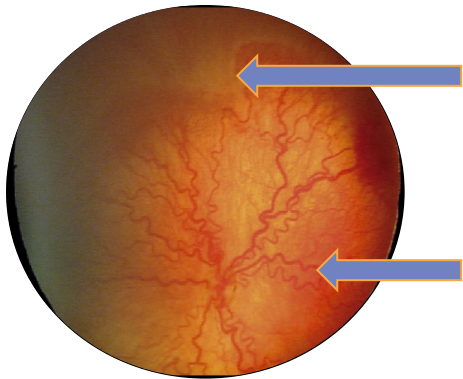
Pathophysiology of ROP

- Underdeveloped peripheral retina becomes ischemic → **VEGF** release → neovascularization → complications
- VEGF: vascular endothelial growth factor; promotes new blood vessel formation

COMPLICATIONS

- Bleeding of abnormal new vessels
- Retinal detachment** → leukocoria
- Long-term: myopia, strabismus, cataract, glaucoma, amblyopia

This underscores the importance of checking for **red reflex** in all neonates! **Leukocoria** (white pupil) may indicate ROP (from retinal detachment complication), congenital cataract, retinoblastoma, or other causes. Consult ophthalmology!



Demarcation between avascular peripheral retina and vascular retina

Engorged and tortuous vessels with surrounding neovascularization

MANAGEMENT

If indicated to treat, sacrifice ischemic peripheral retina to **stop VEGF** production via:

- Pan-retinal photocoagulation (PRP) **laser**
- Anti-VEGF therapy** (intraocular injection of monoclonal antibodies)

If present, treat retinal detachment (laser or surgery)

Follow-up, usually yearly, with ophthalmology throughout childhood after ROP diagnosis for long-term complications