

# 15-Year Outcomes Following Threshold Retinopathy of Prematurity

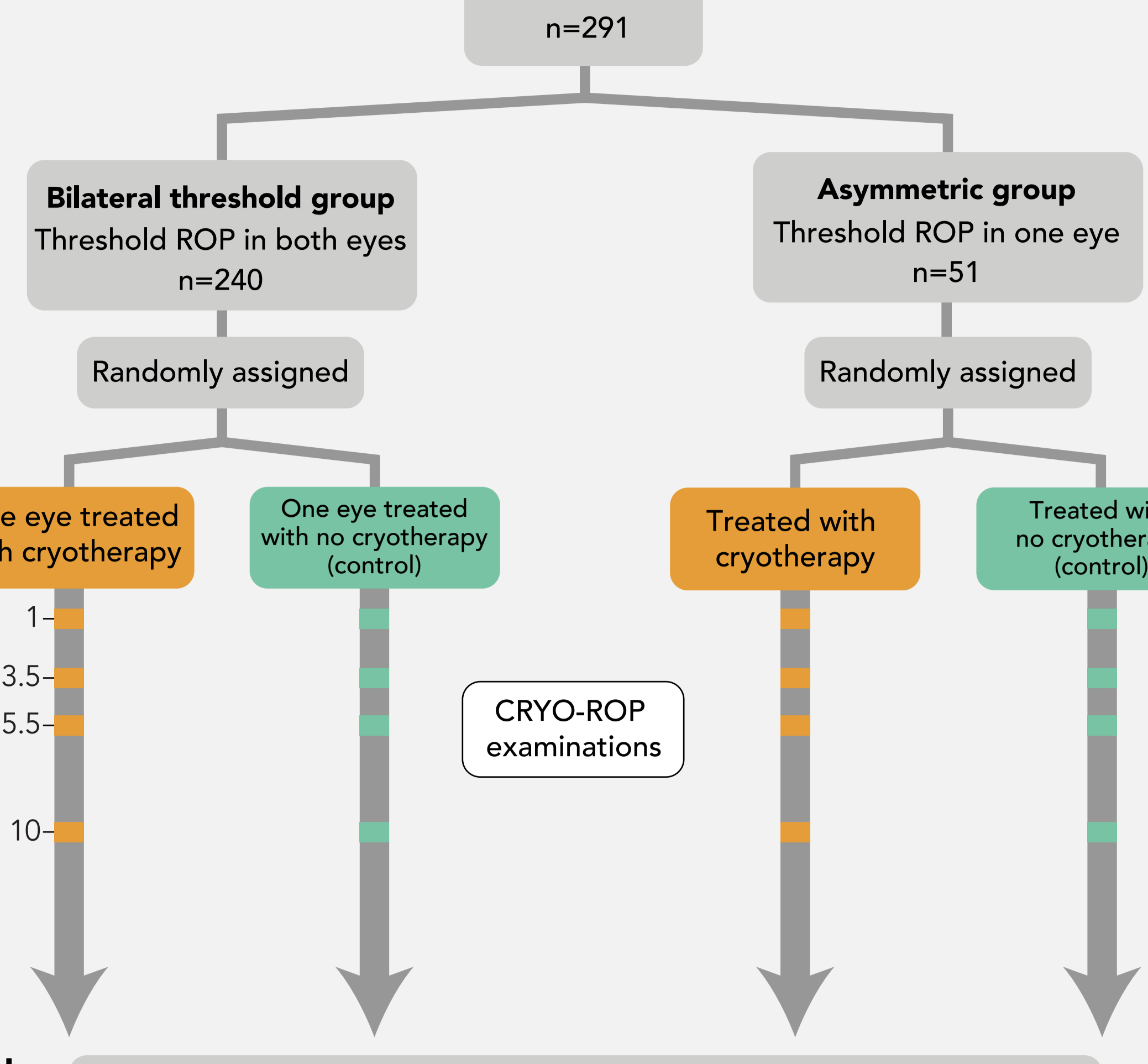
## Final Results From the Multicenter Trial of Cryotherapy for Retinopathy of Prematurity

Cryotherapy for Retinopathy of Prematurity Cooperative Group. *Arch Ophthalmol.* 2005;123:311-318.  
doi:10.1001/archoph.123.3.311

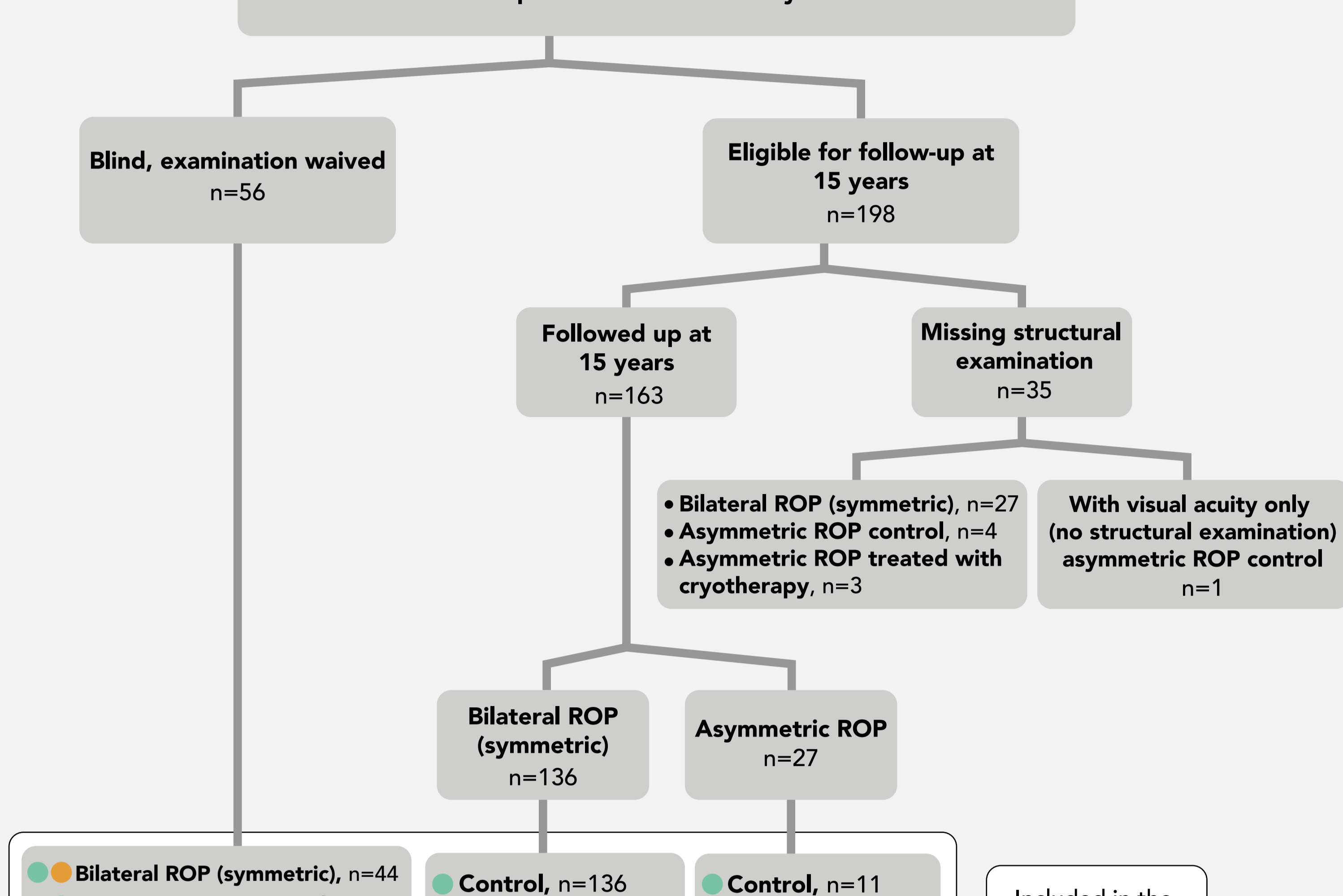
Cryotherapy and, more recently, laser therapy has become the standard care for "threshold" retinopathy of prematurity (ROP). However, the stability of the benefits as the affected patients grow and develop is uncertain. This Multicenter Trial of Cryotherapy for ROP (CRYO-ROP) reports the ocular structure and visual acuity outcomes at age 15 years, and the incidence of retinal detachment between 10 and 15 years of age.

Subjects from the original CRYO-ROP multicenter trial were evaluated 15 years after their initial randomization to measure both visual and structural outcomes.

### The CRYO-ROP trial in 1988



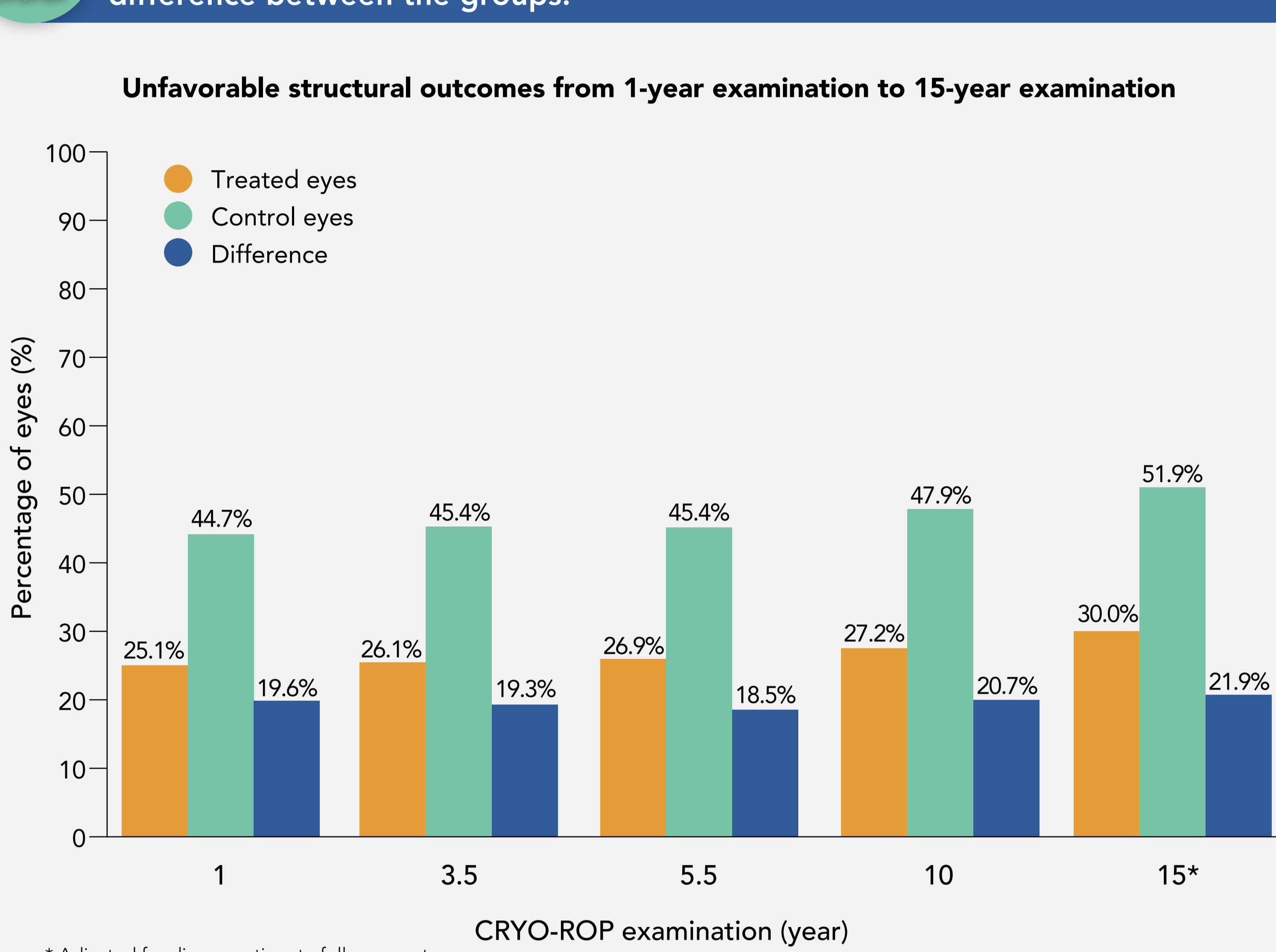
### The present study



\*With birth weights less than 1251 g, and severe (threshold) ROP in one or both eyes.

During the 15-year examination period, there was a gradual increase in unfavorable structural outcomes in both treatment groups and in the percentage difference between the groups.

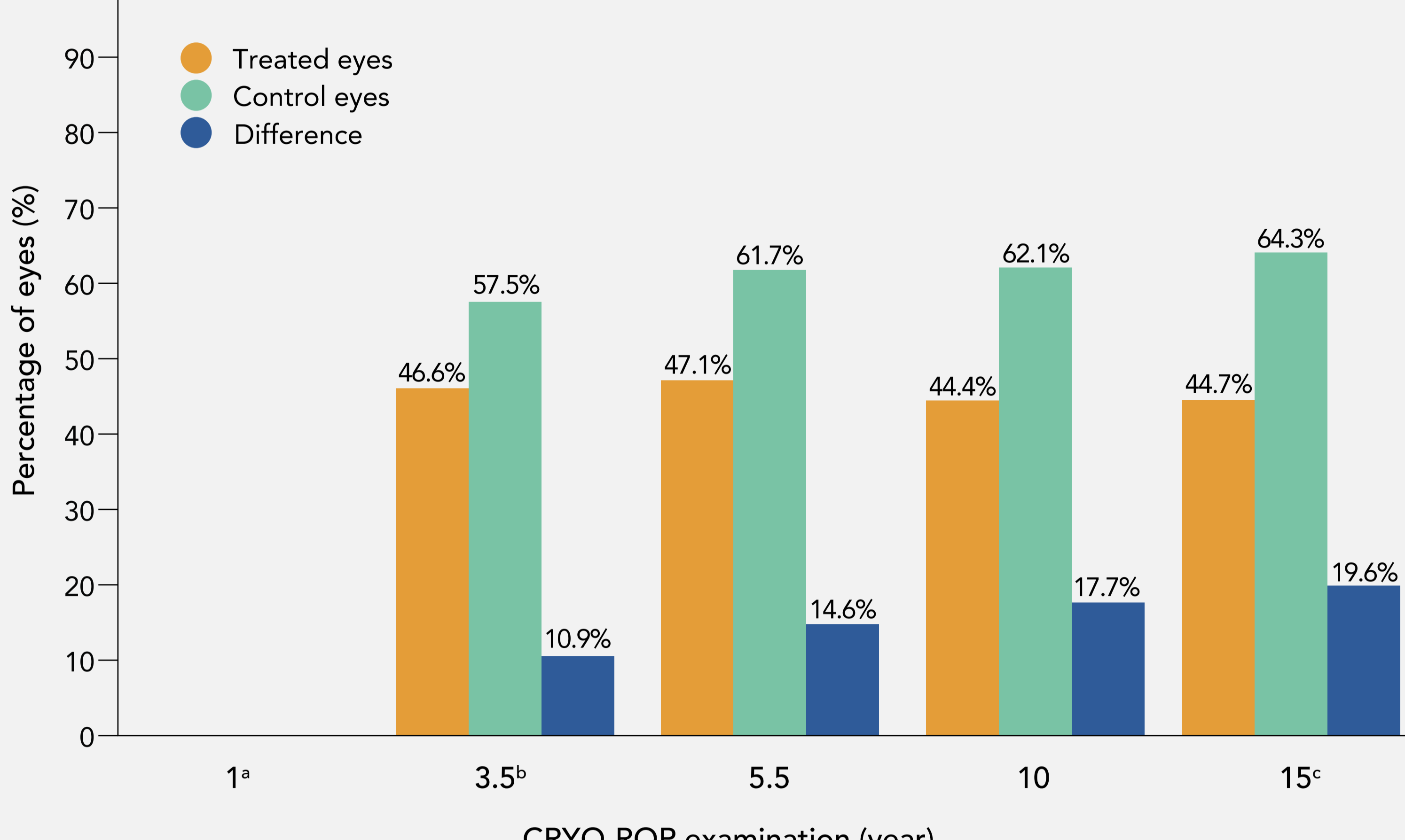
### Unfavorable structural outcomes from 1-year examination to 15-year examination



\* Adjusted for disproportionate follow-up rates.

While there was little change over the 15-year examination period in visual acuity for treated eyes, there was a gradual increase in unfavorable visual acuity outcomes in the control eyes.

### Unfavorable visual acuity outcomes from 1-year examination to 15-year examination



<sup>a</sup> Recognition visual acuity not measured at 1 year.

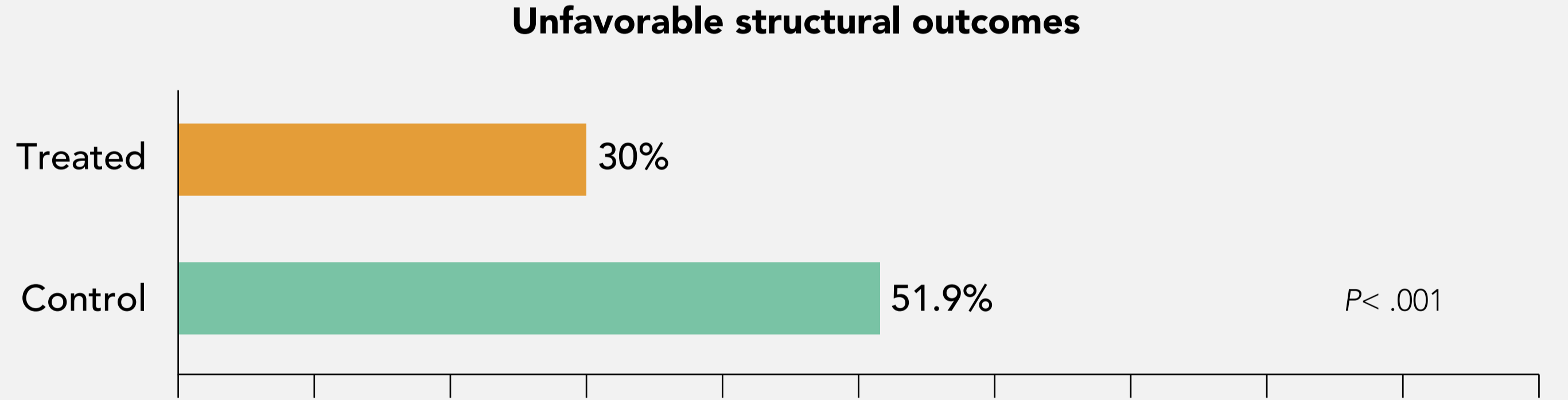
<sup>b</sup> Crowded HOTV Recognition Visual Acuity Test used.

<sup>c</sup> Adjusted for disproportionate follow-up rates.

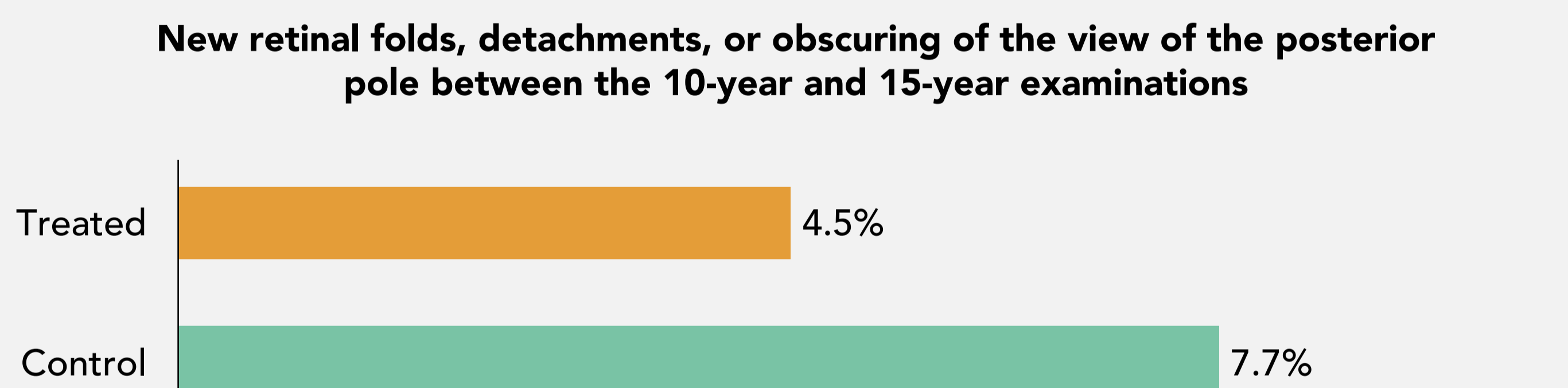
There was a lower proportion of eyes with unfavorable structural and functional outcomes in cryotherapy-treated eyes in comparison to control eyes.



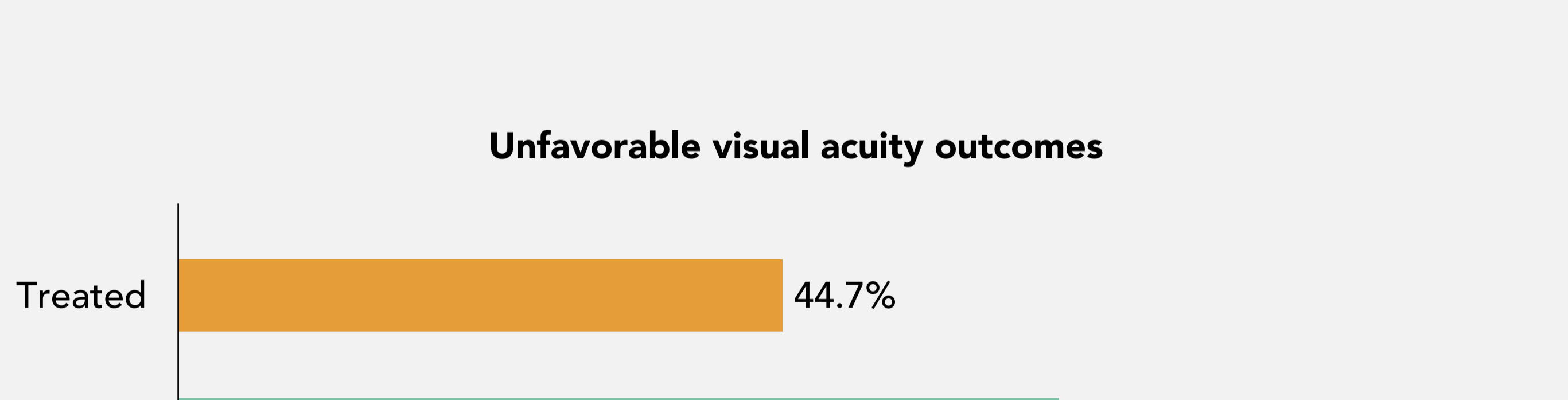
### Unfavorable structural outcomes



### New retinal folds, detachments, or obscuring of the view of the posterior pole between the 10-year and 15-year examinations

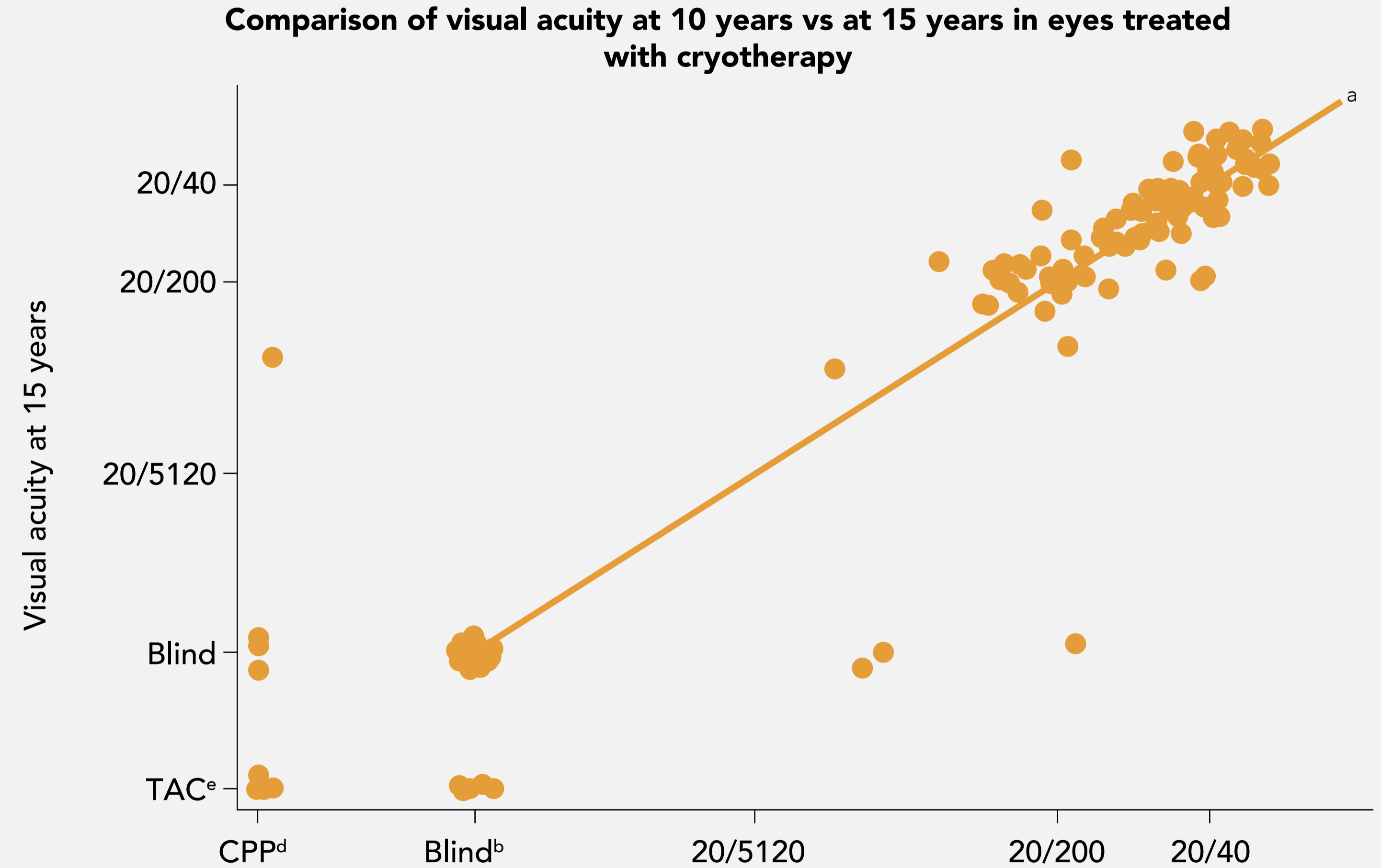


### Unfavorable visual acuity outcomes



Visual acuity was generally stable between the 10-year and 15-year examinations for both cryotherapy-treated and control eyes.

### Comparison of visual acuity at 10 years vs at 15 years in eyes treated with cryotherapy



<sup>a</sup> The diagonal line indicates equal acuity at the 2 ages.

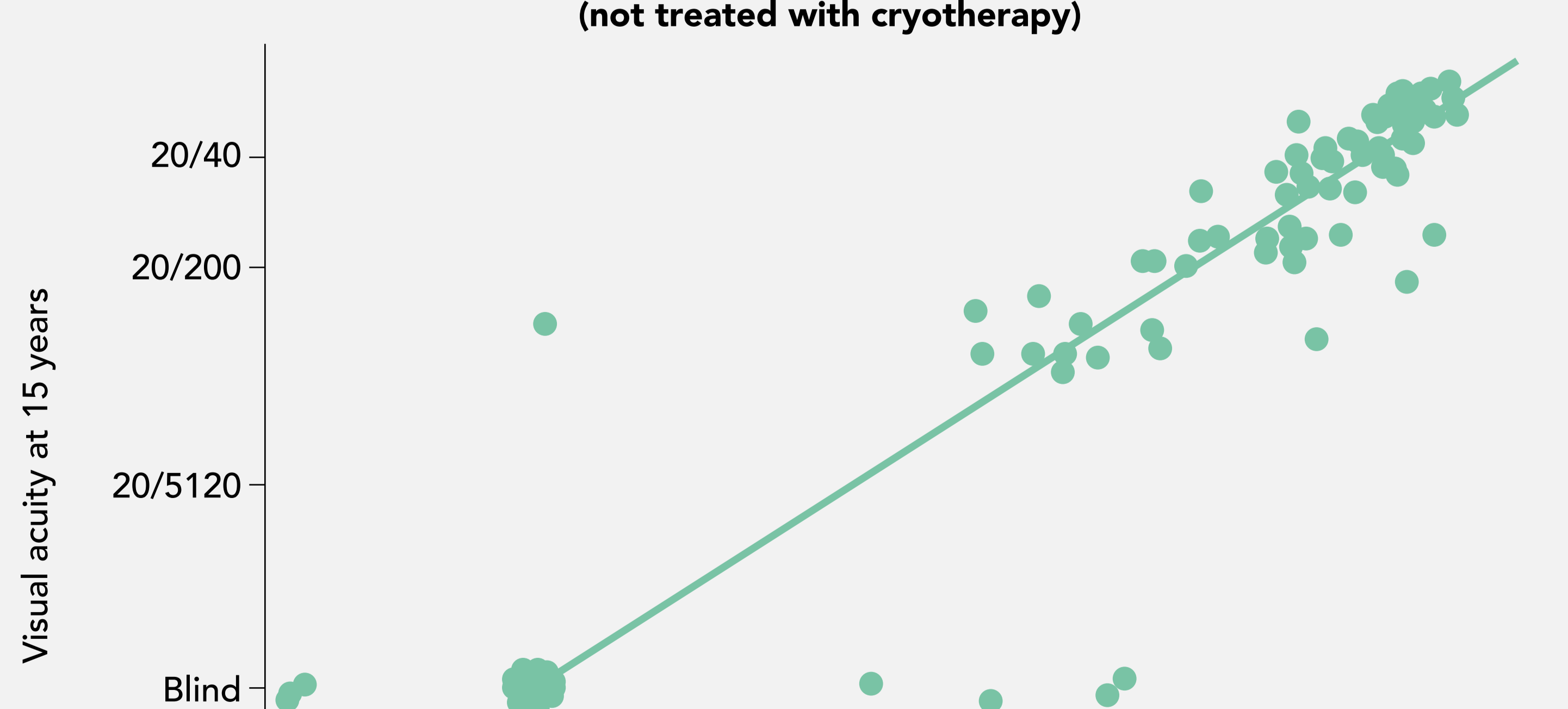
<sup>b</sup> Blind indicates being unable to identify letters on the 20/200 line when tested at a distance of 0.5 m at 15 years (equivalent to 20/1600) and unable to detect the grating on the 0.32-cycle/cm Teller acuity card.

<sup>c</sup> At 10 years, testing at 0.25 m or 0.125 m was permitted, allowing quantification of acuity distance to 20/6400 equivalent.

<sup>d</sup> Cannot pass pretest (ie, the child was unable to identify large letters presented at a near distance; vision was better than light perception when tested with Teller acuity cards, but recognition (letter) acuity could not be quantified).

<sup>e</sup> Teller acuity card, better vision than light perception but not quantifiable on recognition acuity testing; 0.32-cycle/cm Teller acuity card was used because child was neurodevelopmentally delayed or because vision was too poor to allow recognition of the 20/200 letter at 0.5 m.

### Comparison of visual acuity at 10 years vs at 15 years in control eyes (not treated with cryotherapy)



Results from CRYO-ROP examinations conducted at 3.5, 5.5, and 10 years indicated that eyes that were saved from blindness by cryotherapy developed visual acuity that was better than 20/200 but worse than the normal range for age.

### Conclusions

**Both the structural and functional benefit of cryotherapy for treatment of threshold ROP was maintained across 15 years of follow-up. New retinal detachments, even in eyes with relatively good structural findings at age 10, suggest value in long-term, regular follow-up of eyes that experience threshold ROP.**