

The Incidence and Timing of Treatment-Requiring Retinopathy of Prematurity of Prematurity in Nanopremature and Micropremature Infants in the United States

A National Multicenter Retrospective Cohort Study

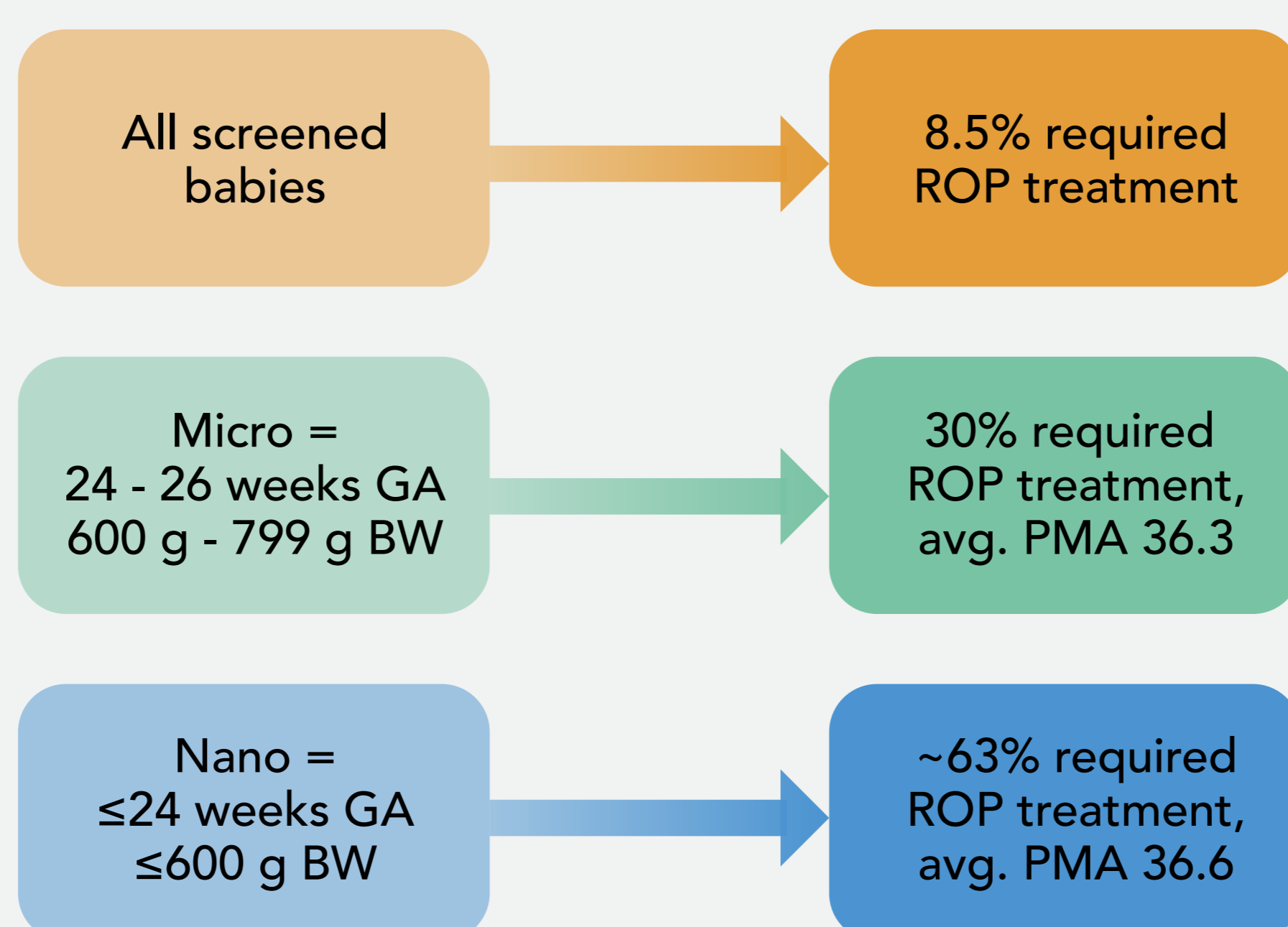
Scarboro SD, Harper CA 3rd, Karsaliya G, et al. *Ophthalmol Retina*. 2024;8:279-287. doi:10.1016/j.oret.2023.10.003

7293 infants (14,586 eyes) were screened for retinopathy of prematurity (ROP) across 5 centers in the United States to analyze the incidence and timing of treatment-requiring ROP in extremely small premature infants. The hypothesis was that the smaller the infant by gestational age and birthweight (BW), the higher their likelihood of requiring treatment for ROP. The study conducted a retrospective chart review to determine the incidence and timing of treatment-requiring ROP.

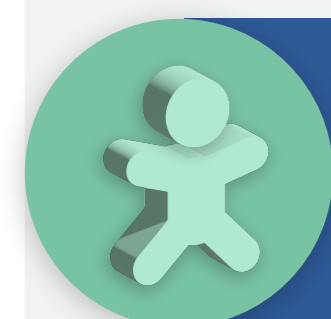
In conclusion, micropremature and nanopremature infants are significantly more likely to require treatment for ROP. With demographic data matched to all 5 major US regions spanning the last decade, these results have the potential to inform neonatologists, pediatricians, and ophthalmologists of an important shift in the landscape of prematurity in the United States.



Premature infants screened for ROP from 2002-2022 were divided into cohorts based on GA and BW

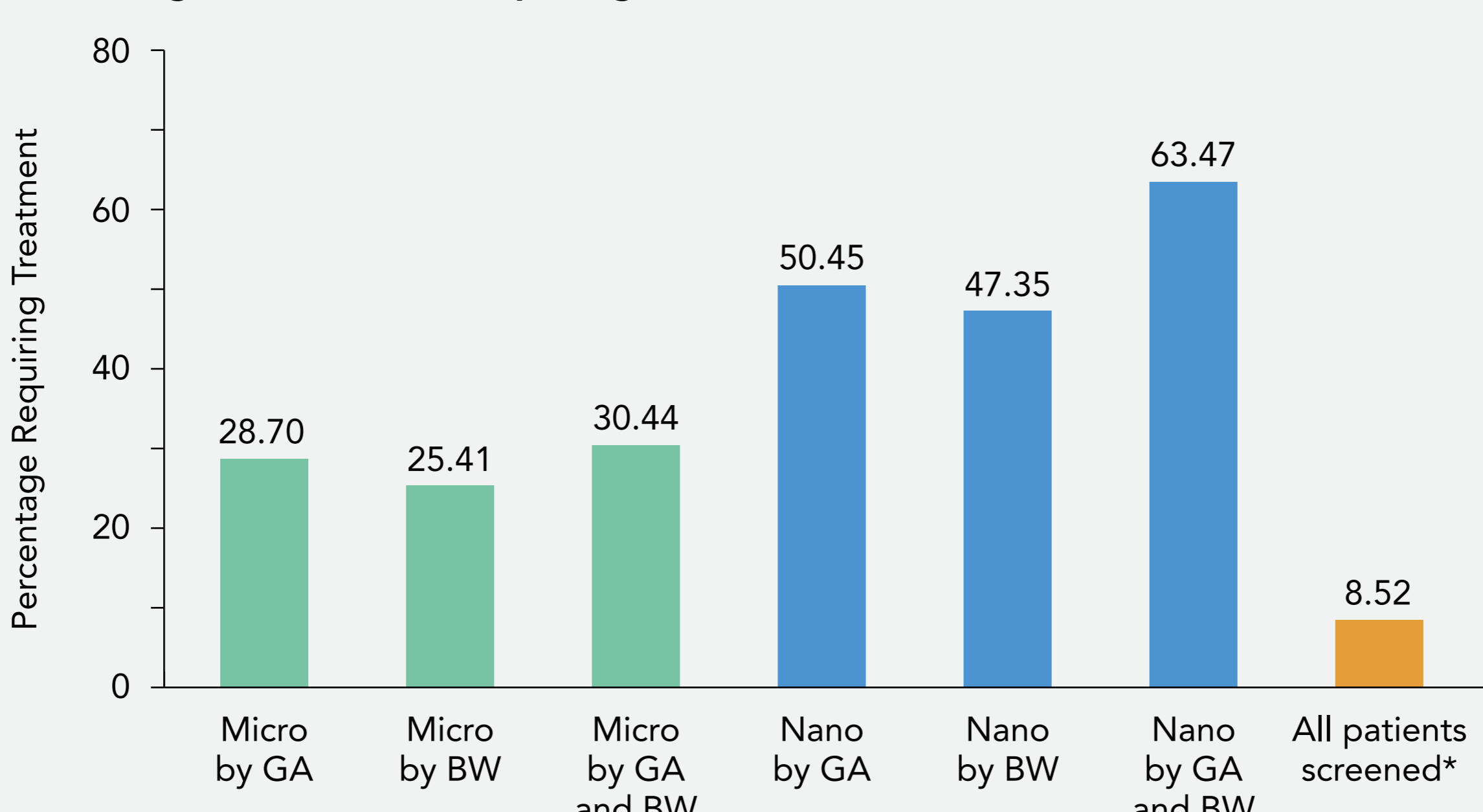


BW = birth weight; GA = gestational age; PMA = postmenstrual age.



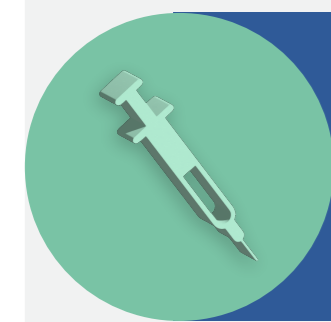
Percentage of patients requiring treatment for retinopathy of prematurity is significantly higher for all micropremature and nanopremature infants

Percentage of Patients Requiring Treatment for ROP Based on Micro/Nano Criteria



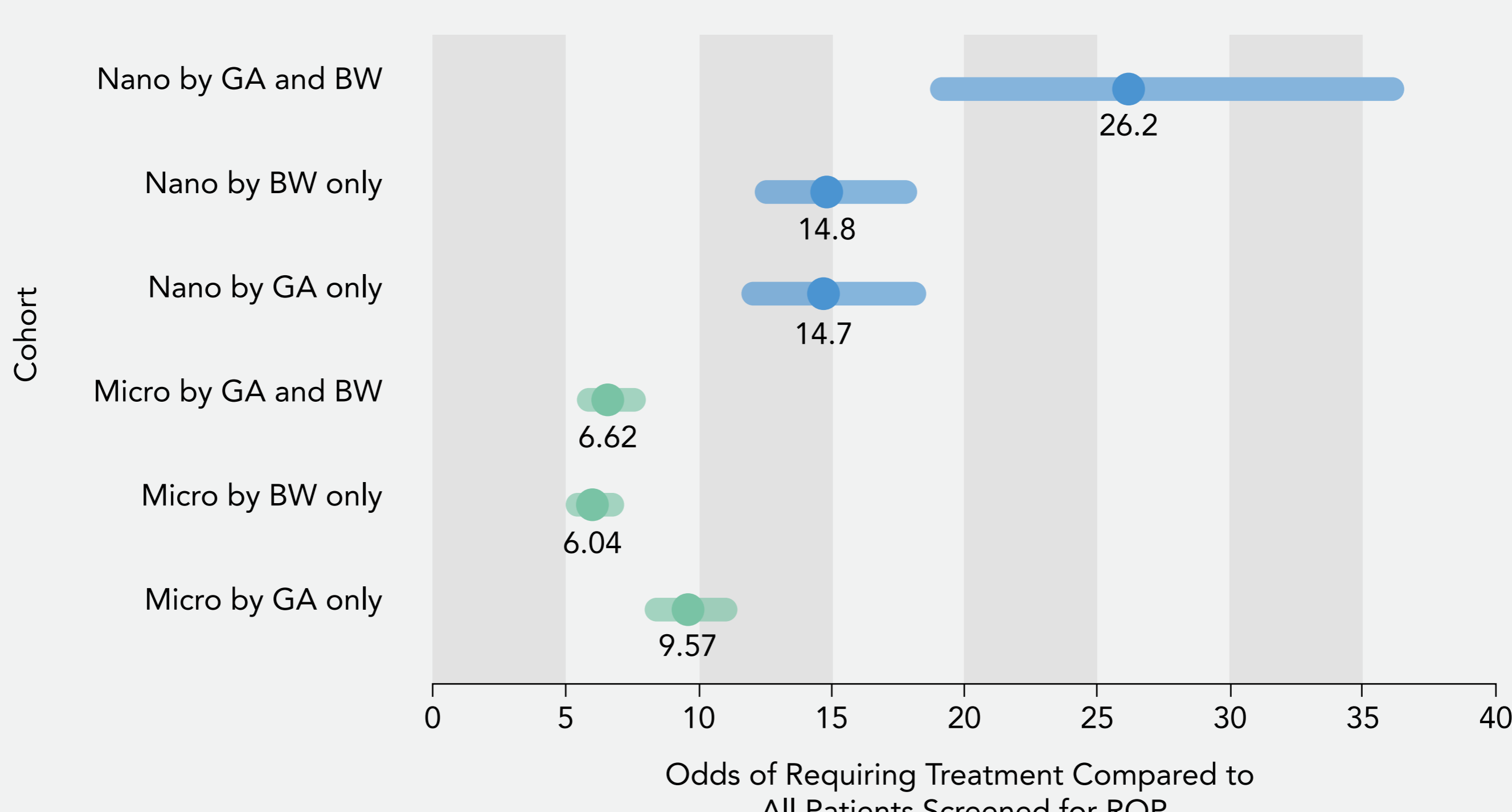
*Regardless of GA or BW (ARA, Byers, Bascom Palmer only)

ARA = Austin Retina Associates; BW = birth weight; GA = gestational age.

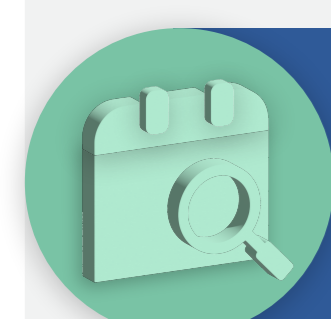


Patients meeting the nanopremature criteria by GA and BW were 26.2 times more likely to require treatment compared with all patients screened for ROP

Odds Ratio of Requiring Treatment for ROP Based on Size Cohort

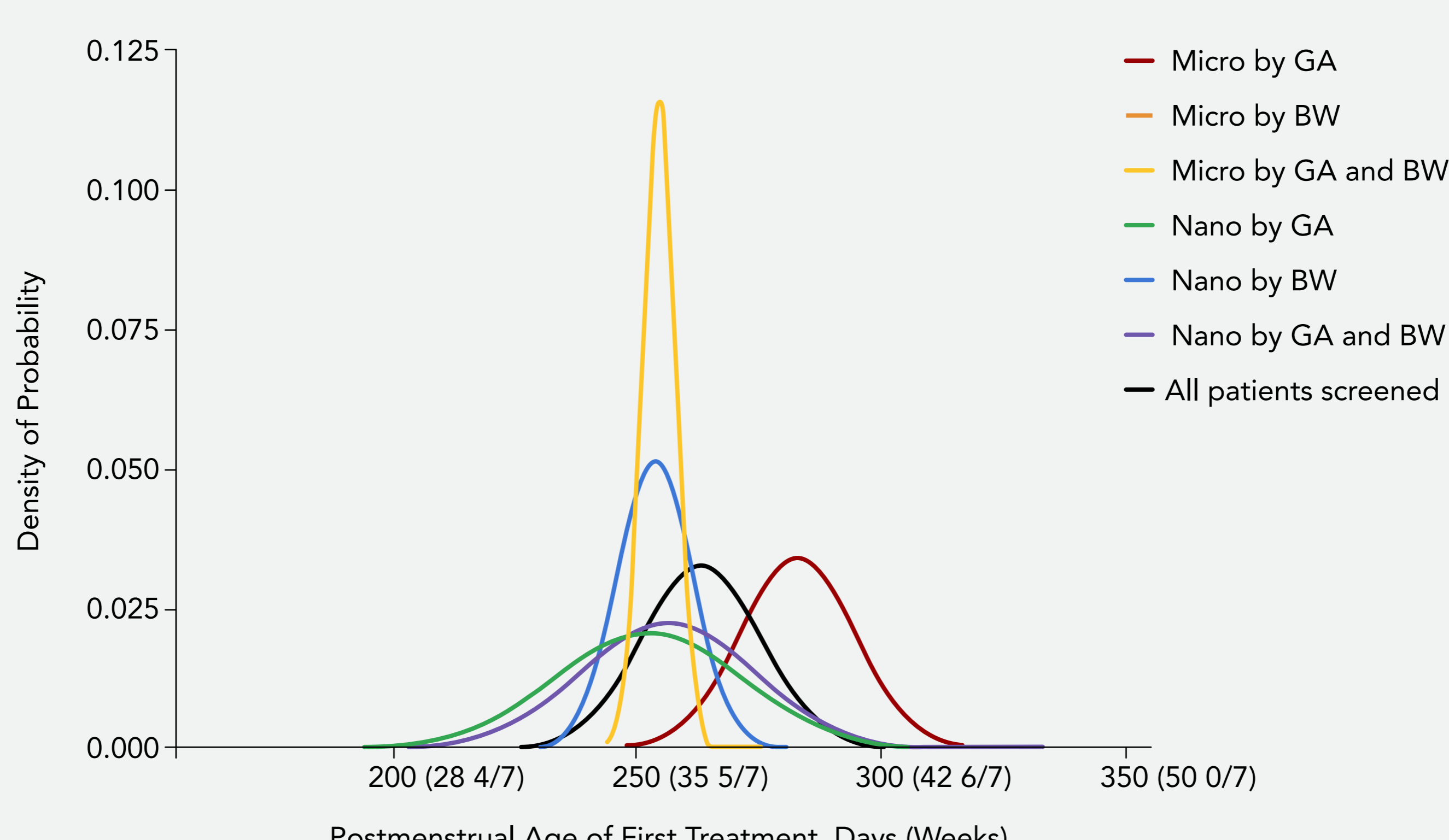


BW = birth weight; GA = gestational age.

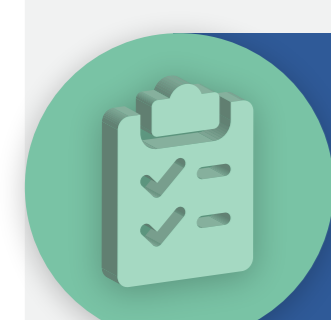


All patients screened for ROP had a wide distribution of treatment age with an average PMA of 37.2 weeks

ROP Treatment Timing Based on Micro and Nano Criteria



BW = birth weight; GA = gestational age; ROP = retinopathy of prematurity



Conclusion

- As medicine continues to advance and more infants meeting the micropremature and nanopremature criteria continue to survive, we will need to continuously reassess the incidence, course, and timing of their preterm-associated diseases
- As of 2023, although the average rate of treatment for all patients screened for ROP is 8.5%, nanopremature infants have a 47% to 63% chance of requiring treatment for ROP and micropremature infants have a 25% to 30.4% chance of requiring treatment for ROP
- Micropremature and nanopremature infants have a higher risk of developing treatment-requiring ROP and may benefit from closer monitoring than larger premature infants