Pr3vent™

A Vision for the FUTURE

Pr3vent™

No child should suffer from avoidable vision loss. Through education, dedication and technology, Pr3vent is setting new standards in infant vision care.

By integrating Universal Newborn Eye Screening (UNES) into standard healthcare practices, Pr3vent is not just offering a service — it is driving change in pediatric healthcare globally. This e-book will delve deeper into Pr3vent's innovation and its benefits to infant vision. This has profound impact on newborn lives. In the near future every newborn's vision is protected, so that children can explore, learn, and thrive.

THE IMPORTANCE
OF UNIVERSAL NEWBORN EYE SCREENING

Early detection and intervention of newborn vision problems is life changing. By catching issues early, doctors can initiate treatment during a critical period when the brain and eyes are still developing, vastly improving the chances of preserving vision.

The Universal Newborn Eye Screening exam is designed to ensure that every child develops healthy vision. Pr3vent provides exams that can detect a range of ocular abnormalities. This is minimally invasive and can be performed within the first days of a newborn's life.

While many countries have mandatory screening programs for conditions like hearing loss in newborns, eye screening is not always included. This gap is where Pr3vent steps in with its advanced technology to provide access to early eye care.

PROTECTING INFANT VISION WITH

UNIVERSAL NEWBORN EYE SCREENING

The birth of a child is one of life's most profound moments, filled with hope and dreams for the future.

Vision is perhaps the most important sense and a vital component of cognitive and motor development but is often overlooked.

Many vision threatening conditions present at birth go undetected. This leads to lifelong challenges, including blindness.

By offering Universal Newborn Eye Screening, we can identify and address vision-threatening conditions before they impact the child's future.

Pr3vent is dedicated to infant vision care and offers the opportunity to detect avoidable infant vision loss and blindness.

UNDERSTANDING VISION

ABNORMALITIES

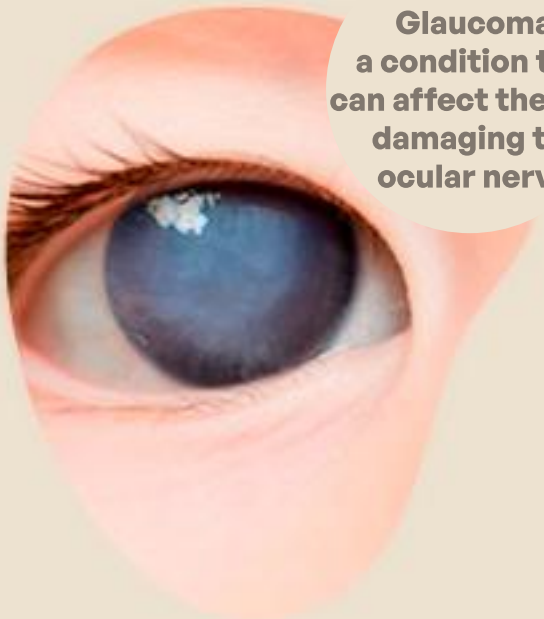
IN NEWBORNS

Newborns are born with a range of visual abilities, but their vision is not fully developed at birth. Over the first few months of life, their ability to focus, track movement, and perceive depth improves significantly.

However, in some infants visual abnormalities disrupt this natural development. These conditions can range from minor issues, such as refractive errors, to more severe conditions like cataracts, glaucoma, or retinoblastoma, a rare but serious eye cancer.

Retinoblastoma, a retinal cancer that mainly affects children up to 5 years old.

Myopia, nearsightedness, or short-sightedness causes blurry vision in the distance.



Glaucoma, a condition that can affect the eyes damaging the ocular nerve.

Visual abnormalities in newborns often present without obvious symptoms. A baby may appear healthy yet have an underlying vision problem that can only be detected through specialized screening.

If not diagnosed, these conditions can lead to permanent vision impairment or even blindness, severely affecting the child's ability to learn, explore, and engage with the world.

Vision problems during infancy can impede more than just sight—they can impact a child's cognitive, social, and emotional development. Vision plays a critical role in recognizing faces, objects, and learning to move in space. Any disruption to this process can delay a child's ability to develop motor skills, communication abilities, and even form emotional bonds with caregivers.

WHAT
THE NUMBERS SAY

Globally, 1.4 million children live with irreversible blindness, with 80% of cases preventable through early detection. Conditions like retinoblastoma, congenital cataracts, and retinal disorders often remain undiagnosed in infancy due to the limitations of standard screenings. Without timely treatment, these conditions can lead to vision loss, developmental delays, and even death.

The health impacts are profound. Studies show that blind children are 5 times more likely to experience developmental challenges and 3 times more likely to face severe mental health issues. Moreover, untreated visual impairments can increase the risk of accidents and reduce life expectancy.

Economically, the cost of untreated childhood blindness is staggering—$27 billion annually, accounting for healthcare, education, and lost productivity.

WHY PR3VENT?

Dr. Moshfeghi (Chief of Retina, Stanford university) and Jochen Kumm are longtime friends and colleagues and often discuss ideas for improving healthcare. During one conversation, Darius mentioned seeing a five-year-old patient who had lost significant vision—a reality more common than people realize.

Jochen asked why the condition hadn't been detected earlier. Dr Moshfeghi explained that early retinal exams are rare due to limited research, lack of accessibility, and outdated technology that made the process slow and inefficient.

The solution combine retinal exams with a integrated software (Picture Archiving and Communication System) to make detection faster, more reliable, and scalable, and providing timely screening for all newborns was clear within minutes.

From that pivotal conversation, Pr3vent was born. Over several years they developed advanced technology, trained teams, and partnered with hospitals and clinics, making retinal screening accessible to every baby. Today, Pr3vent stands as a leader in preventing childhood blindness, driven by their shared vision of a brighter future.

MEET
THE FOUNDERS

JOCHEN KUMM

Jochen Kumm leads Pr3vent as the CEO, building on his experience as an entrepreneur and innovator that brings computation and technology to medicine. Jochen has held leadership positions with the Human Genome Project, Stanford University Roche Pharma, and IBM Research Africa.

He has been a leading contributor or founder for startups such as Pathogenica, Pinpoint Science, and Veracyte. Jochen holds a BA from Harvard University and PhD from Stanford University.

Dr. Darius Moshfeghi co-founded Pr3vent with Jochen Kumm. He is an internationally recognized expert in pediatric retina disease and retina telemedicine.

He has dedicated his career to using telemedicine and digital technology to prevent blindness in children. His clinical leadership has been pivotal, and his work in pediatric retina screening provides the clinical foundation for Pr3vent. Dr Moshfeghi s is Chief of Retina at the Byers Eye Institute at Stanford University.

DARIUS MOSHFEGHI

Pr3vent offers revolutionary infant vision screening using sophisticated software tools and a top-tier camera system.

This provides a comprehensive approach for universal newborn eye exams for full-term babies and Retinopathy of Prematurity (ROP) screening for premature babies.

MAIN FEATURES OF THE
PR3VENT SOLUTION

- **EASY-TO-USE SOFTWARE (PACS)**

Pr3vent makes eye screening simpler, more reliable, and accurate. It helps run large-scale operations more smoothly, ensuring patients and imaging are managed with HIPAA-compliant PACS support.

• EXPERT EVALUATION

Pediatric retina specialists from Stanford University review the eye exams, offering deep expertise.

• ADVANCED SCREENING CAMERA

Pr3vent uses FDA-approved cameras that are widely used. Secure DICOM protocols connect to the Pr3vent PACS.

These pediatric retina cameras use a wide field of view (130 degrees) capturing more of the eye in each image.

APPLICATIONS

• **Universal Newborn Eye Screening:** Designed to detect a range of retina conditions and opacities at birth, enabling early intervention and better outcomes.

• **ROP Screening:** Offers a proprietary quantitative and intuitive scoring system for ROP, contributing to more straightforward clinical decision-making. The cofounder of Pr3vent has been instrumental in the advancement of this system, impacting over 2% (and growing) of all ROP cases in the United States.

PR3VENT

ADVANTAGES

Expertise:
The platform is backed by independent research (338,000 exams), peer-reviewed publications, and leading retina graders.

Scalability:
Pr3vent's PACS makes screening safe and easy to operate while conforming to a security and engineering standards.

Streamlined ROP Management:
ROP management includes support for imaging, scheduling and follow-up management, simplifying ROP care.

A brighter
FUTURE

ABOUT
THE EXAM

According to published peer-reviewed studies involving more than 330,000 babies that were imaged approximately 5% of newborns had one or more pathologies including life-threatening diseases, vision loss, hemorrhages, inflammations, and others.

The table shows the summary from the studies and the abnormalities found.

All these eye diseases are treatable if detected early, and many – if not most - of these diseases are not detected by the Red Reflex test.

STUDY RESULTS

ABNORMALITY FOUND ON NEWBORN SCREENING	NUMBER OF PATIENTS	PERCENTAGE OUT OF 3573 INFANTS
RETINAL HAEMORRHAGE	769	21.52
SUBCONJUCNTIVAL HAEMORRHAGE	50	1.40
VITREORETINOPATHY (likely retinopathy of prematurity vs FEVR)	15	0.42
ABNORMAL FUNDUS PIGMENTATION (ex.: CHRPE)	9	0.25
OPTIC NERVE DYSPLASIA/MGDA	7	0.20
IDIOPATHIC RETINAL VENOUS TORTUOSITY	4	0.11
SEVERE OPTIC NERVE CUPPING	3	0.08
CONGENITAL CATARACT	2	0.06
PERSISTENT FOETAL VASCULATURE	2	0.06
RETINAL MASS (retinoblastoma vs hamartoma)	2	0.06
OPTIC NERVE COLOBOMA	1	0.03
CORNEAL LEUKOMA	1	0.03
MICROPHTHALMOS	1	0.03
FUNDUS LESIONS WITHOUT FIRM DIAGNOSIS (presumed infectious aetiology)	5	0.14
TOTAL	871	24.39

Retinal haemorrhages are excluded an are reported separately within. FERV, familial exudative vitreoretinopathy, MGDA, morning glory disk anomaly.

Pr3vent offers an advanced solution for early newborn vision screening, focusing on Prevention, Protection, and Precision to protect against preventable vision loss and blindness. Early detection and treatment of vision-threatening conditions set the foundation for a better quality of life, supporting healthy development in infants.

BENEFITS OF
ADVANCED NEWBORN VISION SCREENING

Prevention:
Early examination and prompt follow-up prevent avoidable vision loss. Nearly all detected conditions are treatable, and timely interventions saves vision.

Protection:
Vision is central to a child's cognitive and physical development. Pr3vent's screening process is designed to protect a child's vision, promoting healthy development from birth.

Precision:
High-resolution, image-based assessments offer precise insights. These retinal images capture a detailed view of the infant's eye, allowing experts to conduct thorough assessments without distressing the baby.

WHAT HAPPENS

IN THE EXAM?

The Pr3vent exam uses imaging which is faster and less invasive than traditional manual exams.

Graders identify features associated with over 50 types of conditions, including Retinoblastoma, congenital cataracts, infections, and structural malformations.

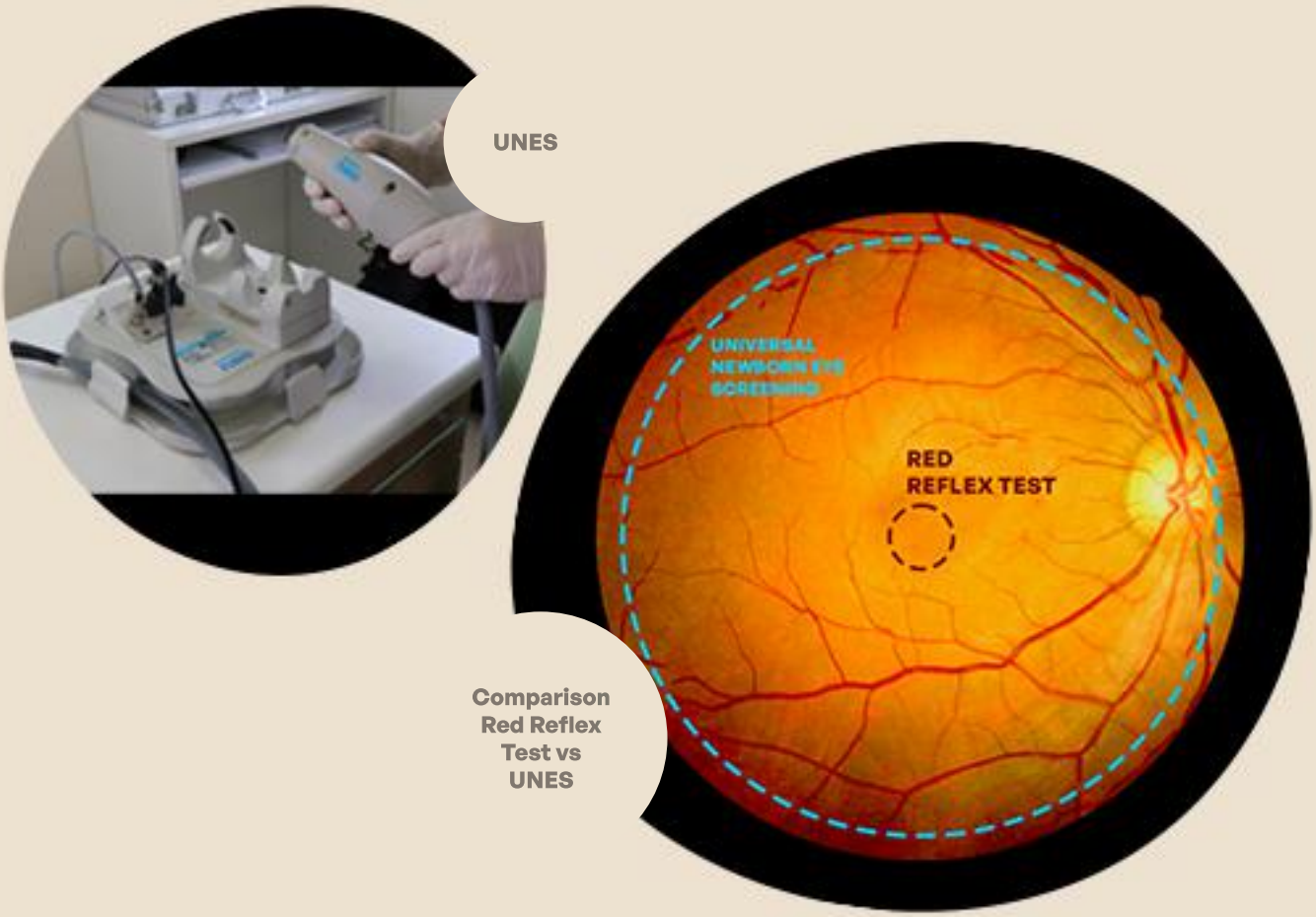
Detailed reports from expert graders are usually provided within 48 hours, so that follow-up care happens much faster.

Data form more than 5000 newborns shows that 1 in 30 children has some treatable ocular condition.

Studies show that more than 95% of vision-threatening conditions detected early are treatable, but timely diagnosis and intervention are crucial for preserving vision.ring early care for a lifetime of healthy vision.

ADVANCED EYE SCREENING VS. THE RED REFLEX TEST

The Advanced Newborn Eye Screen examines more of the retina than the Red Reflex Exam, supporting accurate diagnoses and detection of abnormalities. The Red Reflex Test illuminates only a tiny fraction (6.5% of Retina) of the retina through the pupil and misses peripheral anomalies and is limited to large abnormalities.



Comparison Red Reflex Test vs UNES

PR3VENT EXAM

WORKFLOW

Universal Newborn Eye Screening process is simple and painless. This exam is quick and the results obtained are accurate. We ensure that only highly trained nurses perform the test.

Dilation:

Before imaging drops that dilate and numb the infant eye are administered as advocated by the American Academy of Ophthalmology.

Imaging:

An external photograph and 5 or more retina images are obtained from each eye

Analysis:

Images are evaluated and reviewed by Stanford experts. A report is delivered to your doctor.

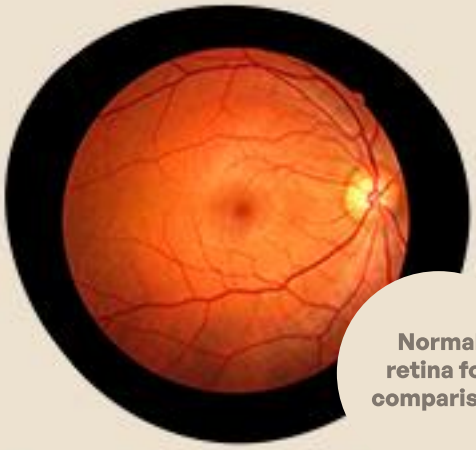
Follow-up:

If you receive a clean “bill of health” you will know that you don’t have to live with the residual uncertainty of a Red Reflex.

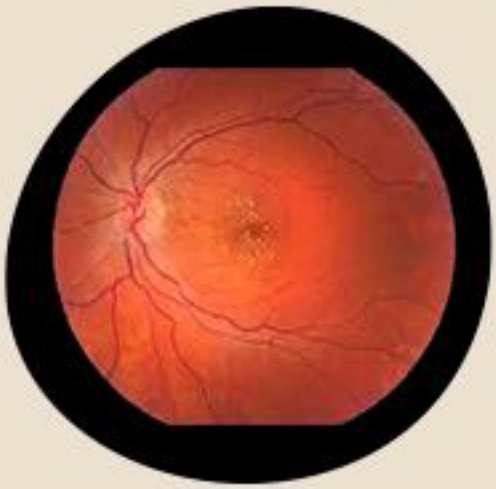
If physician follow-up is recommended, the baby will receive care when protecting vision treatments are most effective.

KEY RETINAL CONDITIONS

IDENTIFIED IN NEWBORN VISION SCREENING



Normal retina for comparison



Retinal Infections

Infections during pregnancy, like congenital toxoplasmosis, syphilis, and TORCH infections, can damage a baby's retina, impacting vision from birth.

Ocular Trauma

Eye injuries, such as those from Shaken Baby Syndrome or accidental trauma, can lead to retinal damage and require early intervention.

Retinoblastoma
A rare cancerous tumor in the retina, marked by symptoms like a white reflection in the pupil (leukocoria), crossed eyes (strabismus), and vision problems.

Retinopathy of Prematurity (ROP)
Common in premature infants, ROP involves abnormal retinal blood vessel growth, which may cause scarring, retinal detachment, and vision loss. Symptoms are often absent in early stages, though advanced cases may show leukocoria.

Inherited Retinal Dystrophies:
These genetic disorders cause retinal degeneration, leading to progressive vision loss over time.

Congenital Retinal Disorders:
Present at birth, these conditions result from abnormal retinal development, affecting vision.

CONCLUSION

TOWARD A BRIGHTER FUTURE WITH PR3VENT'S UNIVERSAL NEWBORN EYE EXAM

The early identification of vision-threatening conditions will transform vision care for children worldwide, offering them a brighter future.

Pr3vent's Universal Newborn Eye exam equips healthcare providers with an advanced tool that ensures every infant receives the best chance at clear, healthy sight from the very beginning.

By offering an efficient, precise, and non-invasive approach, Pr3vent enables early detection of retinal abnormalities. Your doctors can then address conditions that, if left undetected, could lead to permanent impairment or blindness.

The PACS platform integrates seamlessly with hospitals and supports follow-up for even the most complex cases, such as Retinopathy of Prematurity (ROP).
Pr3vent aims to reduce the incidence of childhood blindness and helps to standardize universal eye screening for the benefit of newborns.

Each newborn eye exam is a vital step in Pr3vent's journey to ensure that every child can grow, learn, and experience the world through healthy vision, underscoring the profound impact of early intervention on the well-being of future generations.

Join us in this mission to protect children's sight by visiting our website or reaching out through our primary contact channels.

THANK YOU

FOR FURTHER QUESTIONS, ACESS OUR WEBSITE OR FOLLOW US ON INSTAGRAM