DRYEYESCREEN
ALERT

"SCREENVISION: UNVEILING THE IMPACT OF EXCESSIVE SCREEN USE ON DRY EYE DISEASE"

DRYEYESCREEN
ALERT

HAPPY TEARS

01 ANUBHAB MAJUMDAR
02 SABA ALTAF
03 SHAZMA BATOOL
04 ADAM VINCENT
05 DHAIRYA SHAH
06 KHIZAR

DRYEYESCREEN ALERT

DRY EYE DISEASE

•DRY EYE DISEASE (DED) IS A DISEASE OF THE OCULAR SURFACE, CHARACTERIZED BY TEAR FILM INSTABILITY AND INFLAMMATION, WHICH CAN POTENTIALLY DAMAGE THE OCULAR SURFACE

PRESENTATION VIDEO LINK

https://www.canva.com/design/DAFoQjpdHok/H3rmhgz-zaOtwenbh5XIug/view?utm_content=DAFoQjpdHok&utm_campaign=designshare&utm_medium=link&utm_source=recording_view

https://drive.google.com/file/d/1P72v0ubgg0MEAn-nrMRCNLCcl9ln7V5B/view?usp=drive_link

DRYEYESCREEN
ALERT

SYMPTOMS

ocular discomfort
pain

fatigue

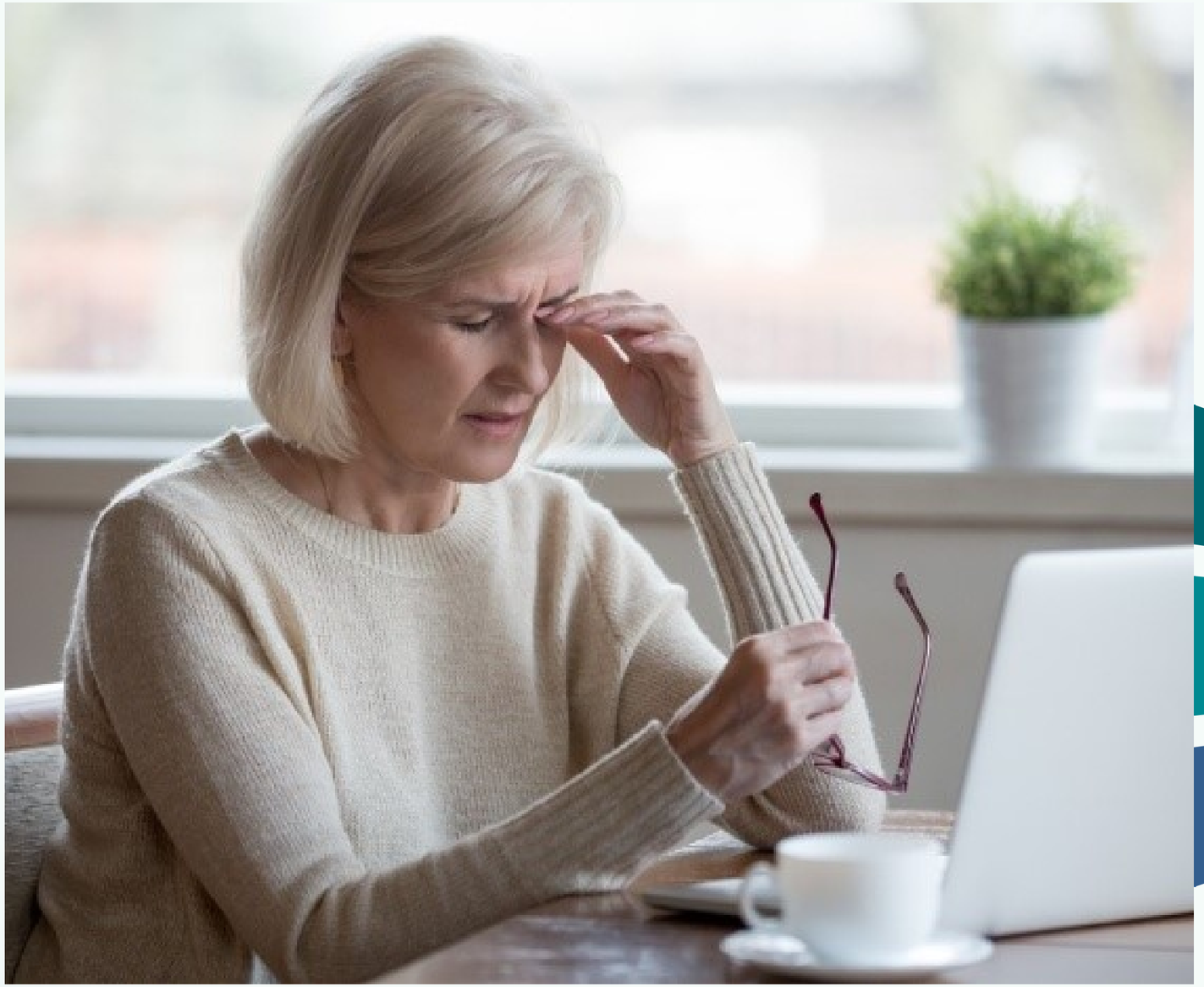
•Symptoms of dry eye vary in severity between individuals and can include

•visual disturbances, such as fluctuating and blurry vision

DRYEYESCREEN ALERT

IMPACT

- Quality of life
- Mental health
- May intervene with concentration-requiring activities like driving
- •Affects productivity-so affecting the economy in the long run



DRYEYESCREEN ALERT

Digital screen use –one of the external risk factors for dry eye disease

One increasingly common extrinsic risk factor for dry eye is digital screen use (eg, computer, laptop, tablet, and smartphone use), which is thought to contribute to its development by affecting blinking dynamics.

DRYEYESCREEN
ALERT

Screen usage

•As an example, a recent study of 9- to 10-year-old children (N=11,875) found that children used screens (for TV, video, video-game playing, texting, chatting, and social media) for an average of 3.8 hours per day and almost all children reported using screens daily.

DRYEYESCREEN ALERT

Various research findings establish a connection between excessive screen usage and dry eye disease(DED)

Clin Ophthalmol

Clin Ophthalmol

Studies Investigating the Relationship Between Digital Screen Use and Symptoms of Dry Eye or Dry Eye Disease

Reference	Sample	Finding
Hikichi et al, 1995[77]	New outpatients at eye centers (N=2127; age range=10–92 years)	133 (6%) individuals used digital screens. The prevalence of DED was higher among those who used digital screens (30/133; 23%).
Uchino et al, 2008[29]	Office workers (N=3549)	Severe symptoms of dry eye were more prevalent among those who used digital screens for >4 hours per day (OR=1.83).
Uchino et al, 2013[31]	Office workers (N=561)	Those who used digital screens for >8 hours per day had a higher risk of definite or probable DED (OR=1.94).
Moon et al, 2014[35]	Children (N=288; age range=10–12 years)	Prevalence of smartphone use was higher among children with DED (71.4% vs 50%). Daily duration of smartphone use (OR=1.86) and total daily duration of digital screen use (OR=1.82) were associated with an increased risk of DED.
Kawashima et al, 2015[4]	Office workers (N=369)	Duration of digital screen use was longer in those with DED (6.5 hours vs 6.0 hours).

Open in a separate windov

DRYEYESCREEN
ALERT

Screen usage

•As an example, a recent study of 9- to 10-year-old children (N=11,875) found that children used screens (for TV, video, video-game playing, texting, chatting, and social media) for an average of 3.8 hours per day and almost all children reported using screens daily.

DRYEYESCREEN ALERT

Research findings also suggest deterioration in the tear quality

A small study by Cardona et al found several changes in the tear film after 20 minutes of video-game playing on a computer screen in 25 healthy young adults.[37] Tear meniscus height decreased, tear breakup time decreased, the tear breakup area increased, and the interference patterns of the lipid layer changed following video-game playing.[37]

A later study examined changes in tear film over the course of a workday (ie, at 8 am and 5 pm) in a group who worked approximately 8 hours per day on computers (n=30) and a group who worked <1 hour per day on display screens (n=30).[38] No significant change was observed in Schemer score (with topical anesthesia) over the workday for either group, but tear breakup time decreased from 9.15 seconds in the morning to 6.80 seconds in the evening in the digital screen workers.[38] In the group that worked <1 hour per day on digital screens, tear breakup time was approximately 15 seconds in the morning and the evening.[38] When different digital devices have been compared, reading on a computer resulted in lower tear meniscus height, higher osmolality, and greater conjunctival redness compared to reading on a smartphone, possibly because reading on a smartphone was associated with a lower gaze angle and lower extent of exposed ocular surface.[39]

The results of these studies suggest digital screen use is associated with an acute deterioration of tear film quality

DRYEYESCREEN
ALERT

Screen usage

•As an example, a recent study of 9- to 10-year-old children (N=11,875) found that children used screens (for TV, video, video-game playing, texting, chatting, and social media) for an average of 3.8 hours per day and almost all children reported using screens daily.

DRYEYESCREEN
ALERT

Screen usage

•As an example, a recent study of 9- to 10-year-old children (N=11,875) found that children used screens (for TV, video, video-game playing, texting, chatting, and social media) for an average of 3.8 hours per day and almost all children reported using screens daily.

DRYEYESCREEN
ALERT

A quick summary

•The most prevalent hypothesis to explain the link between digital screen use and dry eye is digital screen use influences blinking dynamics by reducing both blink rate and blink completeness, leading to increased ocular surface dryness.31,44–47 Aqueous tears evaporate from the tear film during the interval between each blink, and full blinking is required to replenish the tear film by distributing tears (from lacrimal glands) and lipids (from Meibomian glands) over the ocular surface. Thus, reduced and incomplete blinking results in ocular surface dryness because it allows for greater evaporative loss, which could, over time, potentially initiate the DED cycle.48 Interestingly, individuals who have dry eye typically blink more frequently than individuals without dry eye, which may be an attempt to compensate for tear film instability.45

DRYEYESCREEN ALERT

IMPLEMENTATION PROCESS

- App would be running in the background
- Count blinks over an interval of 10 mins and then take the average
- Ask the user if he/she is wearing a contact lens/has the problem of excessive blinking or some muscular or ocular problem

  If yes exempt her from the test.
- Ifno, then start counting the no. of blinks

DRYEYESCREEN ALERT

MARKET ANALYSIS

•Market Analysis-The market for eye-tracking technology is rapidly growing, with a projected value of $1.75 billion by 2025. The demand for non-invasive eye-tracking technology is on the rise, especially in industries such as healthcare, gaming, marketing, and social media.

•Our AI Eye Blink Counter is a unique product that can be used in a variety of industries and has the potential to disrupt the market.

Primarily we are focusing on software-based companies that can use this software for improving the productivity of their staff.

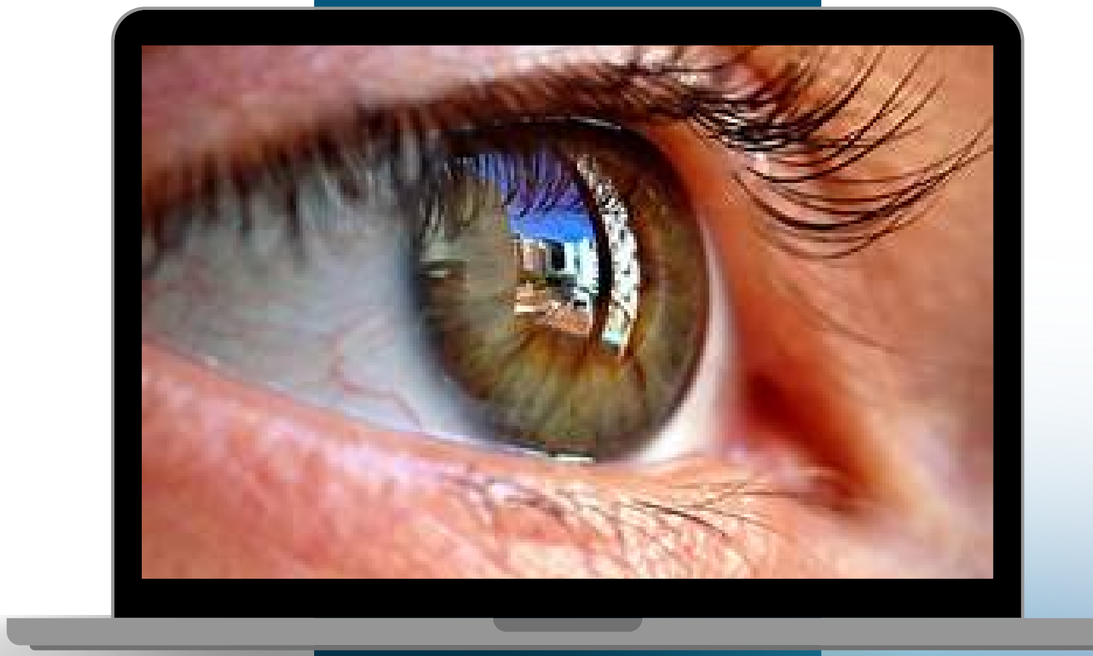
DRYEYESCREEN ALERT

FUTURE PROJECTIONS

- We can also use this project in medical AI for non-invasive analysis of tear eyes
- Also in future we are planning to include deep learning in order to capture the corneal deformations and study them in the form of a research

TARGET MARKET

1)software companies
2) medical professionals
3) researchers
4) social media influencers
5) sleep researchers,
6) and ADHD studies.
7) Software companies can use our technology to monitor and enhance the productivity of their staff.
8) Medical professionals can use it for overall eye care, tear analysis, and sleep research. Researchers can use it for scientific studies and experiments. Social media influencers can use it to analyze their followers' engagement and optimize their content for maximum impact. ADHD studies can use it to monitor the effectiveness of treatments and improve patient outcomes.



DRYEYESCREEN
ALERT

MARKETING STRATEGY

marketing strategy will focus on building our brand and creating awareness about the benefits of our AI Eye Blink Counter. We will use social media, content marketing, and targeted advertising to reach our target audience. We will also attend industry events and conferences to showcase our technology and network with potential clients.

DRYEYESCREEN ALERT

CODE REPOSITORY

•Sabaheer/Eye-Blinks (github.com)

DEMO VIDEO

https://youtu.be/Xv8amv8avAI

https://youtu.be/s1fVJAw4stk

PRESENTATION VIDEO:

https://www.canva.com/design/DAFoQjpdHok/H3rmhgz-zaOtwenbh5XIug/view?utm_content=DAFoQjpdHok&utm_campaign=designshare&utm_medium=link&utm_source=recording_view

THANK'S FOR WATCHING

DRYEYESCREEN
ALERT