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Chairman, Division of Ophthalmology, Albert Einstein Medical Center, Philadelphia

In clinical practice for 25 years

Member of Transitions Optical’s Diversity Advisory Board
See well, work well

Health → staff performance → productivity

Have to feel your best to work your best

Have to see your best to feel your best
Sight – our most valued sense

60% More frightened of blindness than heart disease

80% Losing their eyesight is the “worst thing that could happen” (next to death, or loss of a loved one)
Still not doing enough

- 80% of blindness is avoidable
- Less than 8% of adults know that the sun can harm the eyes
- Just 4 out of 10 adults have visited their eye doctors within the past year
- People with vision insurance do better, **BUT** 2 out of 10 don’t use vision benefit even after enrolled – easy to put off
You can help

Employer and employee education are key…

Communicate the message: **prioritize the eyes!**
The eye and how it works
The eye – an incredible organ

- You blink about 10,000 times a day
- The muscles that control your eyes are the most active in your whole body
- Your eyes will bring you 24 million images in your life
- About half of the brain is involved in seeing
- Your eye can tell the difference between 500 shades of grey
The eye – how it works
What can go wrong?

Vision problems

- Refractive errors
- Quality of vision issues

Eye diseases

Overall health problems
Refractive errors
Refractive errors: myopia
Refractive errors: hyperopia
Refractive errors: presbyopia
Refractive errors: astigmatism
Prevalence of refractive issues

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hyperopia</td>
<td>25%</td>
</tr>
<tr>
<td>Myopia</td>
<td>42%</td>
</tr>
<tr>
<td>Astigmatism</td>
<td>33%</td>
</tr>
<tr>
<td>Presbyopia</td>
<td>51%</td>
</tr>
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</table>
Uncorrected / undercorrected refractive error

Many still aren’t seeing their best, even with eyewear

<table>
<thead>
<tr>
<th>Issue</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Trouble seeing up-close (even while wearing eyewear)</td>
<td>34%</td>
</tr>
<tr>
<td>Trouble seeing far away (even while wearing eyewear)</td>
<td>17%</td>
</tr>
</tbody>
</table>

National average, age 40+ (Self reported, CDC survey)
Reasons for miscorrection

Don’t realize they can’t see well

Prescription out-of-date

Resist seeking treatment (denial or fear of aging stigma)

Treatment insufficient
  - E.g. non-Rx reading glasses

Lack of access
“Even a slight miscorrection in vision – so slight that a worker may not have noticed – can decrease productivity by up to 20 percent”

- University of Alabama at Birmingham School of Optometry
Impact of environment
A visually demanding world

Even with “perfectly” corrected vision, eyesight can be far from perfect in the “real world”
Digital eyestrain

2 out of 3 employees spend more time at work than 3 years ago

- 22% respond to work email after hours

More use of digital devices

- 45% have a smartphone
- 31% own a tablet computer
- 26% own an e-reader
Blue light from digital devices

95% use electronics within an hour of bedtime

“Blue” light emitted from personal electronics can suppress melatonin, making it harder to fall asleep and delaying sleep patterns

1 out of 3 employees say daytime sleepiness interferes with work

13% would nap during work

Sleep deprivation can lead to:

- Blurred vision and eye discomfort
- Change in color perception
- Sudden loss of vision, usually noticed after awakening
- Swelling of the optic nerve, gradually leading to vision deterioration
- Glaucoma development
Glare

**Sources**: everyday sunlight, lenses, extreme conditions

- Leads to eyestrain and headaches
- Distracting and potentially dangerous
- Diminishes job performance

8 out of 10 say glare affects their vision outdoors

- Transitions Optical Survey

7 out of 10 agree their eyes are sensitive to light

- Transitions Optical Survey
Headaches from light and glare

Of the 90% of employees who say headaches affect their work performance:

- Nearly 1 out of 4 cite light or glare as cause
- Only 33% tell employer

5.4% report headaches strong enough to result in lost productive time
Research: prevalence of visual disturbances

Women: more likely to experience visual disturbances at work (especially dry eyes and headaches)

<table>
<thead>
<tr>
<th>Condition</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Tired eyes</td>
<td>47%</td>
</tr>
<tr>
<td>Reflection off computer screen</td>
<td>31%</td>
</tr>
<tr>
<td>Bright, glaring light</td>
<td>30%</td>
</tr>
<tr>
<td>Dry eyes</td>
<td>30%</td>
</tr>
<tr>
<td>Headache from visual disturbance</td>
<td>29%</td>
</tr>
<tr>
<td>Blurry vision</td>
<td>28%</td>
</tr>
<tr>
<td>Reflection off personal device</td>
<td>16%</td>
</tr>
<tr>
<td>Reflection off outdoor surfaces</td>
<td>16%</td>
</tr>
</tbody>
</table>

Transitions Optical employee survey, 2013
Research: prevalence of visual disturbances

8%: morning
17%: throughout the day
24%: evening
32%: afternoon

8 out of 10 employees say their eyes bother them at some point during the day

Transitions Optical employee survey, 2013
Research: impact on productivity

More than half of employees take breaks to rest their eyes

2011: 29% took vision breaks
2013: 53% of employees took vision breaks

13% of employees are taking more than 5 breaks to rest their eyes!

Women: more likely to say they suffer from visual disturbances at work, but less likely to take breaks

Transitions Optical employee survey, 2011 vs. 2013
# Costs of eyestrain and headaches

<table>
<thead>
<tr>
<th></th>
<th>Annual potential productivity loss per person</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eyestrain and fatigue</td>
<td>15 minutes per day</td>
<td>KAZI Personal Control Lighting Study</td>
</tr>
<tr>
<td>Severe headaches from</td>
<td>3.5 hours/week</td>
<td>Stewart, Walter article in JAMA</td>
</tr>
<tr>
<td>light and glare</td>
<td></td>
<td></td>
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</tbody>
</table>
See for yourself
See for yourself
Eye disease and other threats
Eye basics: cataracts
Eye basics: age-related macular degeneration (AMD)
Eye basics: diabetic retinopathy
Eye basics: glaucoma
UV exposure

Short-term
- Sunburn of eye (temporary blindness)

Cumulative
- Cataract
- Macular degeneration
- Skin cancer around eyes

Medications can increase risk

82% of Americans know that extended exposure to the sun can cause skin cancer, but only 9% know it can harm the eyes.

- Transitions Optical Survey
## Impact of UV-related eye diseases

<table>
<thead>
<tr>
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<th>Annual potential cost avoidance</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cataract</td>
<td>$770/person</td>
<td>WHO Bulletin</td>
</tr>
<tr>
<td>AMD</td>
<td>$48-76/person</td>
<td>Karnan, J.</td>
</tr>
<tr>
<td>Diabetic Retinopathy</td>
<td>$939/person</td>
<td>American Diabetes Association</td>
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</table>
Impact of glaucoma

<table>
<thead>
<tr>
<th>Annual potential cost avoidance</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glaucoma</td>
<td>$864/person</td>
</tr>
<tr>
<td></td>
<td>Ophthalmology Management</td>
</tr>
</tbody>
</table>
Eye trauma

2,000 workers have eye injuries each day
- 1 out of 3 are treated in the ER
- 100 result in 1+ lost workdays

ERs treat a sports-related eye injury every 13 minutes
- Costs $175 to $200 million per year

Eye injuries are a leading cause of blindness in kids

90% of these injuries are preventable with protective eyewear.
- National Eye Institute, The Vision Council
Overall health issues

Diabetes: increases diabetic retinopathy and early onset cataract risk

Hypertension: increases bleeding in the eye, blurred vision, damage to the optic nerve, glaucoma, vision loss

Smoking: increases age-related macular degeneration (AMD), cataracts, glaucoma, diabetic retinopathy, Dry Eye Syndrome

Mental health: eye disease increases incidences of depression, anxiety, social withdrawal

Antioxidants and certain nutrients: decrease eye ailments

Sleep: replenishes eyes’ essential nutrients (lack of sleep: increases eye irritation)

Exercise: decreases glaucoma, AMD
Role of vision benefit
Premium vision benefit

- Regular, dilated eye exam
- Accurate prescription
- Early detection
- Coverage of lens options to enhance and protect vision
- UV, glare and trauma protection
- Photochromic (Transitions®) lenses
- Progressive lens designs
- Multiple pairs
High interest in eyewear side of benefit

Consumer interest driven by eyewear technology advancement

- 2 out of 3 more likely to enroll in a vision plan with premium lens options

Nearly 90% of employees say it’s important to them that their vision benefit covers the latest lens technologies.

- Transitions Optical Survey
Improved technology

Clearer, darker, faster **photochromics**
- New options for unique visual needs
  (darker for light-sensitive or driving)

Enhanced **AR coatings**
- Less smudging, scratching, fogging

**Polarized** lenses
- Now available in photochromic

**Progressive** lenses
- Wider range of designs and free-form customization
- E.g. wider intermediate zone for computer users

**Lens materials**
- More impact-resistant options (polycarbonate, Trivex® and Tribrid® materials)
Desire for selection, fashion
Putting knowledge into action

Include the conversation during enrollment

Continue to educate throughout the year

- Healthy Sight Working for You®

Track utilization

Take note of employee satisfaction/improved productivity
The bottom line

To work well, you have to see well

Undiagnosed eye diseases/refractive disorders and unaddressed visual disturbances can impact productivity

Employees care about eyewear, but education is needed to ensure they understand its full potential

Vision plans that include premium eyewear technologies – and a selection of quality frame styles – can help provide cost savings and a more, satisfied, productive workforce