

Visual Fatigue: Lighting, Glare and Worker Performance Stats and Facts

FACTS

- **Eye Strain and Headaches:** Long hours at screens or under poor lighting reduce blink rate by nearly 70%, causing dry eye, headaches, and blurred vision.
- **Glare and Reflected Light:** Direct or reflected light on monitors, windshields, and polished surfaces forces the eye to constantly refocus, accelerating fatigue and slowing reaction time.
- **Inadequate Illumination:** Dim work areas hide trip hazards, moving parts, and pinch points; low light levels are repeatedly linked to slips, falls, and machinery incidents.
- **Flicker:** Aging fluorescents and poor-quality LEDs flicker at frequencies the eye cannot consciously detect, triggering headaches, nausea, and fatigue.
- **Night and Shift Work:** Working against circadian rhythm reduces alertness and visual processing; 17 hours awake produces impairment equivalent to a 0.05 BAC.
- **Sun and Headlight Glare:** Direct sunlight, oncoming headlights, and snow or water reflection cause temporary blindness and slow visual recovery in seconds.
- **Fatigue-Driven Errors:** Tired eyes lead to misread gauges, missed signals, missed pedestrians, and missed steps – turning routine tasks into incident reports.

STATS

- NIOSH reports U.S. office workers spend an average of 7.5 hours per day on screens, with blink rate dropping by nearly 70% during sustained screen focus.
- The U.S. BLS recorded 5,283 fatal work injuries in 2023,

with transportation incidents accounting for 36.8% – a leading category strongly tied to driver fatigue and visual impairment.

- NHTSA estimates approximately 1 in 5 fatal U.S. crashes involve a drowsy driver.
- The FMCSA Large Truck Crash Causation Study found driver fatigue associated with 13% of investigated truck crashes.
- NIOSH and FMCSA research confirm that 17 consecutive hours awake produce impairment equivalent to a 0.05 blood alcohol concentration.
- FHWA reported 176 pedestrians struck and killed in U.S. work zones in 2023, with low-light visibility cited among contributing factors.
- OSHA's construction lighting rule (29 CFR 1926.56) sets minimum illumination levels, yet inadequate lighting remains a recurring contributing factor in NIOSH FACE slip, trip, and struck-by fatality reports.