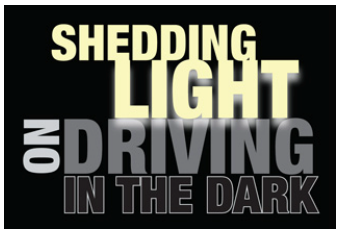

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SHEDDING LIGHT ON DRIVING IN THE DARK

FACT SHEET

Driving in the dark is one of the most hazardous situations drivers face. These times of low light, such as dusk, night or early morning, can account for a disproportionately high rate of accidents[i,ii], especially on roads with no street lighting[iii]. Contributing factors can be traced back to a number of factors, including headlight glare, increased instances of fatigued or intoxicated drivers, and decreased visibility of signs and reflectors[iv]. Additionally, low light levels cause an eye's pupil to dilate, which can accentuate any existing focusing problems and result in blurred vision. Such a blur may require changing the prescription in a driver's contact lenses or glasses, and should be brought to the attention of their eye care professional[v].

- According to the National Safety Council, **90% of a driver's reaction depends on vision**. Vision is compromised at night by reduced depth perception, color recognition, and peripheral vision after sundown[vi].
- According to the US Department of Transportation's Federal Highway Administration, **glare and dark conditions adversely affect a driver's ability to visually detect road obstructions and regulatory guidance** provided by traffic control devices[vii].
- According to the US Department of Transportation's Federal Highway Administration, **starting at age 20, the amount of light needed to drive doubles about every 13 years[viii]**. By the time a driver is 60 years old they need about 10 times as much light as a 19-year-old to see clearly[ix].
- The National Highway Traffic Safety Administration approximates **25% of travel to occur during hours of darkness[x]**.
- According to the U.S. Census Bureau, **15.9 million commuters leave for work between midnight and 5:59 a.m**. These early birds represent 12 percent of all workers[xi].
- According to the National Highway Traffic Safety Administration, over the past 25 years, **49% fatal crashes occur at night despite lower volume of traffic[x]**.
- The National Highway Traffic Safety Administration and the National Safety Council site **the fatality rate at nighttime* to be three times higher than the daytime rate[x]**.

- continued -

Accidents involving pedestrians are even more pronounced under low light levels, with **pedestrians being three to seven times more vulnerable at night** then in daylight[xii].

According to the National Highway Traffic Safety Administration, **the greatest number of pedestrian fatalities result from traffic crashes occurring between the hours of 8:00 PM and 11:59 PM** (29% of all pedestrian fatalities)[xiii].

*Nighttime is classified as 6pm until 6am

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[i] Owens DA, Sivak M. Differentiation of visibility and alcohol as contributors to twilight road fatalities. Hum Factors 1996;38:680-9.

[ii] Andre J, Owens DA. The twilight envelope: a user-centered approach to describing roadway illumination at night. Hum Factors 2001;43:620-30.

[iii] Plainis S, Murray IJ. Reaction times as an index of visual conspicuity when driving at night. Hum factors 2001; 43:620-30.

[iv] http://safety.fhwa.dot.gov/roadway_dept/retro/gen/night_facts.htm

[v] The College of Optometrists, "Night Vision & Driving" http://www.college-optometrists.org/index.aspx/pcms/site.Public_Related_Links.Eye_Health_Issues.Night_Vision_Problems/

[vi] http://www.nsc.org/library/facts/nightdr.htm

[vii] http://safety.fhwa.dot.gov/roadway_dept/retro/gen/back_needs.htm

[viii] http://safety.fhwa.dot.gov/media/nightlights.htm

[ix] http://www.nytimes.com/2001/02/20/health/20BROD.html?ex=1188619200&en=cf55fd08a45f1568&ei=5070

[x] Varghese, Cherian and Shankar, Umesh. *Passenger Vehicle Occupant Fatalities by Day and Night – A Contrast*, NHTSA's National Center for Statistics and Analysis, May 2007.

[xi] http://www.census.gov/Press-Release/www/releases/archives/facts_for_features_special_editions/010328.html

[xii] Planis, Sotiris and Charman, William N. *The Role of Retinal Adaptation in Night Driving*. Optometry and Vision Science; American Academy of Optometry 2005. Vol. 82, No.8.

[xiii] http://www-nrd.nhtsa.dot.gov/pdf/nrd-30/NCSA/TSF2003/809769.pdf