

# Over exposure to High Energy Blue Light (HEV) leads to Macular Degeneration



## Macular Degeneration leads to irreversible sight loss



## Protect your Sight



**Ask Us How**

## 2. Specific points:

### High Energy Blue light (HEV) is photo-toxic.

Cumulative exposure to HEV leads to oxidative changes to the central retina, this rusting increases the risk of Macula Degeneration. HEV has been shown to damage photoreceptors and the Retinal Pigment Epithelium (RPE). Macular pigment consists of carotenoids meso-zeaxanthin, zeaxanthin, and lutein.

This RPE layer normally absorbs blue light lessening its impact on retinal cones. Levels of lutein and zeaxanthin are found to be 35% lower in MD patients.

Few foods contain sufficient levels of these pigments. Dietary supplements are the best way to maintain adequate carotenoid levels.

### Risk factors you can control:

Limit exposure to HEV (Blue light absorbing or reflecting eyewear)

Quit smoking (smokers are 4x more like to develop MD),

Practice good nutrition (diet high in antioxidants, Vitamins A, C, E, Lutein and zinc from fruits, nuts, dark leafy greens)

Maintain a healthy blood pressure,

Control cholesterol.

Get a new family (genetics)

The devastating affects of excessive blue light exposure.

**Additional health risks:** Exposure to HEV at night has been linked to sleep deprivation and several type of cancer (including breast and prostate), diabetes, heart disease and obesity.

HEV triggers a disruption of circadian rhythms by suppressing the production of melatonin, the hormone that triggers sleep.

Circadian rhythm disruption can increase blood sugar levels. Creating a pre-diabetic state. Levels of leptin, the hormone that trigger satiation after meals also go down, leading to weight gain. Lack of sufficient sleep can slow reaction times, impair attention, disrupt concentration, lead to depression and increased appetite. Chronic sleep deprivation has been shown to lead to heart disease.

### Prevention:

Avoid using digital devices two to three hours before bed.

Wear BluTech lenses which absorb 80% of blue light between 400-500nm.

Use Blue Defense coatings that selectively reflect 20% of blue light between 415 and 455nm. Resulting in a 25% reduction in cell death.

Consider the AREDS 2 vitamin formulation.