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A Brief Review; the Importance of Visual Ability and Driving Performance

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Abstract

The eyes are organs that detect light and convert it into electro-chemical impulses in neurons. Visual perception is the ability to interpret information and surroundings from the effects of visible light reaching the eye. Medicine recognizes that altitudes above 1500 meters start to affect humans so that, the eye is very sensitive to restriction of its supply of oxygen. A dimming of vision accompanied by loss of peripheral perception may result from low blood pressure, shock and loss of consciousness. Generalized hypoxia occurs in healthy people when they ascend to high altitude, where it causes altitude sickness leading to potentially fatal complication. On the other hand, consuming alcohol can have short-term negative effects on vision. Brain functions can be impaired by alcohol within minutes of consumption since alcohol is absorbed in the blood. Depth perception and night vision are affected by high level alcohol in blood. It becomes impossible to accurately judge how far away objects are when depth perception deteriorates. Vision becomes blurred or you may see double since and eye muscles lose their precision causing them to be unable to focus on the same object. After drinking alcohol, drivers tend to focus on the road straight ahead and avoid what is happening in their side vision. In this manner age is important in eyesight too. In Causes of visual aging, although there are neural losses, the major decline is due to changes in the eye›s optics. First, the lens becomes yellower, making discrimination of blue colors more difficult. More importantly, less light entering the eye reaches the photoreceptors. Further, the pupil shrinks, allowing less light to enter the eye. In results of this factors indicate older driver›s demands quicker reaction times in response to more complex situations. Finally, visual acuity and driving performance change gradually, and older drivers may not be aware of changes.

Keywords: Field of Vision, Alcohol, Driving, Road Traffic Accident.

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