Resolution # 5

**TOPIC: IN SUPPORT OF USING PROTECTIVE REFLECTIVE CLOTHING AND EQUIPMENT DURING ACTIVITY AFTER DUSK**

**SUBMITTED BY:** Mount Mercy University Association of Nursing Students (MMUANS), Mount Mercy University, Cedar Rapids, IA

**AUTHORS:** Kelsey Gerhart, Allison Heims, Hannah Hurlbert, Kristy Lueken, Malinda Shoaf, Paige Wenger, and Nicole Wubbena

WHEREAS, Walking and bicycling are frequently used modes of travel that benefit the economy, environment, and health but people question the safety of these modes of travel as pedestrian and cyclist fatalities account for nearly a third of all road users killed or seriously injured in accidents (Wood et al., 2011).

WHEREAS, Of the over 4,700 pedestrians killed in traffic crashes in the United States in 2012, almost 70% occurred at night (Borzendowski, Sweall, Fekety, & Tyrrell, 2014).

WHEREAS, Wyoming state law requires bikes to be equipped with rear lights and cyclists to wear at least 200 square inches of reflective neon material and a senate bill in California requires the use of retroreflective high-visibility safety apparel with nighttime activity (Casmiro, 2015; Streeter, 2015).

WHEREAS, Driver’s nighttime recognition distance is 75 feet when individuals wear dark clothes and 260-700 feet when individuals wear reflective clothing. Perception distance when using reflective material varies from 1,200 to 2,200 feet depending on light conditions (Mionske, 2010).

WHEREAS, A combination of multiple types of protective reflective equipment increases safety of individuals. Drivers recognize more cyclists when they wear a reflective vest plus reflectors. Flashing front or back lights on bicycles can increase the visibility of the individuals at night. Cyclists wearing a reflective vest with ankle and knee markings increased both the percentage of drivers who responded to the bicycle and the distance at which the drivers responded (Wood, et al., 2010; Wood et al., 2011).

WHEREAS, Drivers are typically unable to recognize low contrast individuals at a safe distance. Individuals wearing low reflective clothing represent a low contrast hazard against a dark background. Numerous investigations have confirmed an individual’s conspicuity is dramatically enhanced when using retroreflective markings as drivers have limited time to react to an individual’s presence, especially at high speeds, with poor weather, or reduced ambient light (Borzendowski et al., 2014; Miller, Kendrick, Coupland & Coffey, 2010).

WHEREAS, There is evidence that biological motion (biomotion) can be used to increase the conspicuity of individuals at night. Biomotion is visual sensitivity to patterns of human motion. Wearing reflective equipment on joints like the arms, legs, ankles, knees, wrists, elbows, and shoulders rather than the torso, is more effective in helping drivers recognize the presence of individuals at much greater distances than if not wearing protective reflective equipment (Wood et al., 2011).

WHEREAS, Individuals may not fully understand the benefits of reflective clothing, overestimate their conspicuity at night, and underestimate the impact reflective clothing has on their safety. Education is key in preventing accidents. Individuals that are educated about reflective clothing are more likely to wear conspicuity-enhancing garments, which improves their knowledge about the safety measure and can successfully decrease accidents (Borzendowski et al., 2014).

WHEREAS, Drivers may be legally issued a driver’s license even when they have some common visual problems that greatly affect their ability to drive at night therefore, increasing potential problems especially with a glare (Wood et al., 2012).

WHEREAS, Bicycling fatalities are related to problems with frontal conspicuity and inability of a driver to stop as needed. Crashes can also result from drivers failing to yield when bicyclists expect the right of way. These driver related issues may be caused by inefficient scanning of the road or insufficient conspicuity of bicyclists at night (Wood et al., 2011).

RESOLVED, that IANS support the education of students in the K-12 by school nurses, nursing students, and educators to promote the use of protective, reflective clothing and equipment; and be it further

RESOLVED, that IANS support health care providers in the use of anticipatory guidance education with parents and youth related to protective, reflective clothing and equipment; and be it further

RESOLVED, that IANS place an article about use of protective, reflective clothing and equipment after dusk on the IANS website, if feasible; and be it further

RESOLVED, that IANS sends a copy of this resolution to the Iowa Nurses Association, American Nurses Association, the American Association of Colleges of Nursing, the National League of Nursing, the National Organization of Associate Degree Nursing, the Iowa Board of Nursing, National Association of School Nurses, Iowa Department of Education, Iowa American Academy of Pediatrics, Iowa Association of Nurse Practitioners, and all others deemed appropriate by the IANS Board of Directors.