Season, time of day appear to predict higher UV levels, need for sun safety measures among skiers

November 15 2010

Ultraviolet (UV) radiation levels may remain high during winter months, and conditions can change rapidly, suggesting that adults participating in outdoor sports should rely on the season and time of day when judging the need for protective clothing and sunscreen, according to a report in the November issue of *Archives of Dermatology*.

"Over 62,000 new cases of melanoma will occur this year that will claim 8,000 lives, along with over a million cases of basal (a form of slow-growing skin cancer) and squamous (a form of cancer that may occur in various organs, including the skin, lips, mouth or esophagus) skin cancer, both of which are associated with cancer at all sites," the authors write as background information in the article. "The main cause of skin cancer is exposure to UV radiation."

Peter A. Andersen, Ph.D., from San Diego State University, Calif., and colleagues investigated the temporal, seasonal, altitudinal and geographic variables to predict the prevalence of UV radiation at North American ski resorts and the decision of adults participating in outdoor snow activities to protect their skin from the damaging rays. Data were collected at 32 high-altitude ski resorts in western North America from 2001 through 2003. Researchers interviewed guests face-to-face on chairlifts during three-day data collection visits, and observed guests' clothing and equipment to assess level of sun protection. Additional data regarding time and date, temperature and cloud cover were also

recorded.

The authors found that during winter months, average UV levels at the 32 ski areas were moderately low but varied substantially. The strongest predictors of increased UV radiation were clear skies, time close to noon and deviation from the winter solstice. Additionally, altitude and latitude had minor associations with higher UV radiation and temperature had a small positive relationship with UV levels.

Adult sun protection behaviors did not consistently increase with elevated UV levels, and use of sunscreen lip balm, application of sunscreen 30 minutes prior to skiing, wearing a head cover with a brim and wearing gloves were all unrelated to UV levels. However, as UV levels increased, adults were more likely to report wearing sunscreen with a minimum 15 SPF and were more likely to reapply it after two hours. Adults were also more likely to wear sunglasses or goggles as UV levels increased. "The positive relationship of UV to sunscreen use was more characteristic of males than females."

"Skiers and snowboarders evidently monitor outdoor alpine environments in two ways, for sun protection and cold protection," the authors found. "For sun protection, they rely mainly on clear skies as a UV cue. They correctly link clear skies with the need for UV protection and use and reapply more sunscreen because UV is present on clear days." However, adults seem to base protective clothing choices seem on inclement weather rather than elevated UV concerns as they took steps to maintain body warmth on inclement days but took more sun safety precautions on clear-sky days.

"More sophisticated sun safety promotions are needed that teach people both to take precautions and to judge accurately when UV is high" the authors conclude. "In future safety promotions, adults should be encouraged to wear sunscreen on cloudy days because UV is still high

and conditions can change rapidly. They need reminders to rely more on season and time of day when judging UV and the need for sun safety."

More information: *Arch Dermatol.* 2010;146[11]:1241-1247.

Provided by JAMA and Archives Journals