

# Queensland Teacher Sun Survey: Measurements and Procedures for Recording Occupational UV Exposures in Townsville and Toowoomba

Nathan Downs<sup>1,2</sup>, Simone Harrison<sup>2,1</sup> and Alfio Parisi<sup>1,2</sup>

<sup>1</sup> Faculty of Health, Engineering and Sciences, University of Southern Queensland, Toowoomba, Queensland.

<sup>2</sup> College of Public Health, Medical and Veterinary Sciences, James Cook University, Townsville, Queensland.

**Background/Aims:** Occupational exposure guidelines have been developed by the International Commission on Non-Ionizing Radiation Protection (ICNIRP) which weight a UV source corresponding to its potential to cause harm to the skin or eye. When weighted across the incident UV spectrum this limit is expressed as 30 Jm<sup>-2</sup> per 8 hour working day. Local calibration procedures and UV exposure results were made to participating teachers in Townsville and Toowoomba to assess occupational UV exposure risk.

**Methods:** Calibrated polysulphone dosimeter badges were distributed to 58 primary and secondary teachers, employed in a range of teaching roles and compared to self reported exposure times during the Queensland teaching term 4, November 2014 for teaching staff located in Townsville (18 °S) and Toowoomba (27.5 °S).

**Results:** The calibration process required to measure site specific personal UV exposures relative to the ICNIRP guidelines are presented for both participating teacher groups in the November 2014 survey. A total of 474 ICNIRP weighted daily UV exposures were collected ranging from 0 to 279 Jm<sup>-2</sup>. Of these, 109 exposures exceeded the ICNIRP daily exposure limit of 30 Jm<sup>-2</sup>.

**Conclusion:** In Queensland, the potential for harm as a result of exposure to solar UV in an outdoor occupational setting is high. The influence of a high UV climate and the requirement of teaching staff to spend some periods of time

outdoors, supervising children during lunch breaks and sporting activities can result in exposures greater than the ICNIRP occupational UVR exposure guidelines.