

Occupational Skin Cancer: The Sleeping Giant

3rd Multi-Stakeholder Summit on Occupational Skin Cancer at the occasion of the
6th International Conference on Ultraviolet Radiation and Skin Cancer Prevention
and the **5th Global Advances and Controversies in Skin Cancer**

10 September 2024, Brisbane, Australia

Hosted by ACD, EADV, ICOH, ILDS and GlobalSkin

Full event recording available; link will be distributed separately.

Summary

Welcoming Remarks and Introduction

MODERATORS: Adjunct Assoc. Prof. Craig Sinclair, Cancer Council Victoria and Prof. Swen Malte John, Dept. Dermatology, University of Osnabrueck, Germany.

A/Assoc Prof. Craig Sinclair and Prof. Swen Malte John welcomed participants to the 3rd Multistakeholder Summit on Occupational Skin Cancer and acknowledged hosting organisations, Australasian College of Dermatologists (ACD), and the European Academy of Dermatology and Venereology (EADV), International League of Dermatological Societies (ILDS), International Commission of Occupational Health (ICOH), the patient organisation GlobalSkin, and the financial support provided by Regeneron. The diverse audience was recognised, representing countries including Australia, Austria, Canada, China, Denmark, Germany, Greece, New Zealand, and Sweden. The traditional landowners of the lands we were meeting on were acknowledged, as was the passing of Professor Thomas Tenkate, who was down to speak today.

Prof. Swen Malte John provided an overview of the *Multistakeholder Summit Journey*, which was established in 2019 with the goal of facilitating global collaboration to address barriers to non-melanoma skin cancers (NMSC) prevention in workers globally. The outputs from the previous two Summits have included a Position Statements [1, 2] and Global Call to Action [3], urging policy improvements, better NMSC reporting by doctors, improved diagnostic accuracy, and increased accountability on employers in workplace prevention.

Assoc. Prof. Steven Shumack, Sydney, ACD and ILDS. Assoc. Prof. Steven Shumack thanked both moderators on behalf of the ILDS and ACD.

Prof. Myrto Trakatelli, Thessaloniki, Greece, on behalf of the EADV. Pre-recorded presentation. In 2022, the EADV launched its Joint Statement on Skin Cancer Prevention, a call for policy action signed by 58 stakeholder organisations, including ILDS and GlobalSkin, and Members of the European Parliament [4]. This included a call to have NMSC recognised as an occupational disease. Since then, the stakeholders have continued to collaborate to get NMSC recognised as an occupational disease worldwide. Prevention is better than cure – prevention is the only way to fight the problem and offer future workers a safe work environment.

Mr. Murray Turner, Board Director, GlobalSkin. Virtual presentation. GlobalSkin is an international alliance dedicated to improving the lives of dermatology patients worldwide by amplifying their voices. The alliance includes 280 member organizations across 70 countries, representing more than

50 dermatological diseases. GlobalSkin participated in the second multistakeholder summit 2023 at the 32nd EADV Congress in Berlin and emphasises the urgent need to reduce the burden of NMSC for a better future.

Economic and human burden associated with occupational UV exposure

MODERATOR: Assistant Prof. Cheryl Peters, UBC, Canada

Assistant Prof. Cheryl Peters informed participants that she was standing in for Prof. Thomas Tenkate, Toronto, Canada, a very close colleague who passed away in July 2024.

Dr. Renee Carey, Curtin University, WA. “The future burden of occupational skin cancers: Comparison to other occupational cancers.”

The Global Burden of Disease (GBD) Study (2019) estimated that around 1.6 billion workers are exposed to solar radiation at work and found that an estimated 19,000 deaths and half a million disability adjusted life years due to NMSC were attributable to occupational sun exposure globally. In Australia, studies have shown that 55% of workers are exposed to UV radiation during work and 34% work in direct sunlight. Further, outdoor workers receive 2-8 times more UV radiation than indoor workers.

In 2012, Dr. Carey and others conducted the *Australian Work Exposures Study* which found that solar radiation was the most common exposure among Australian workers, with 37% of the Australian male working population and 8% of the female working population being exposed to the sun at work. They then used this to estimate the future burden of melanoma which might be attributable to that occupational exposure and found that 2.5% of future cancer cases in males and 0.4% in females were attributable to occupational exposures. This data was updated in 2016 and then in 2021. In the 2021 analysis, they estimated that around 2.4 million Australian workers were exposed to the sun at work, and that those workers would go on to develop 8,850 melanomas over their lifetime as a result of that exposure. They also did a crude analysis (as NMSC incidence is not recorded in Australian cancer registries) which showed that you could expect around 44,000-106,000 NMSCs in those same workers as a result of their occupational sun exposure. Comparing this burden to the burden seen from other occupational exposures, they could see that solar radiation was responsible for the second highest number of future occupational cancers, after asbestos, and that melanoma is estimated to be the third most common occupational cancer in Australia.

Assistant Prof. Cheryl; E. Peters, UBC Canada. “Economic burden of disease associated with occupational UV exposure in Canada.”

Assistant Prof. Cheryl Peters leads the *CAREX Canada Project*, a national carcinogen exposure surveillance program that develops estimates of the prevalence and level of exposure to carcinogens at work. In 2006, they showed that 13% of Canadian workers were exposed to solar radiation during work. In 2011, 6.31% (4556 cases) of NMSC cases were estimated to be attributable to occupational exposure to solar ultraviolet radiation. This was able to be estimated due to three provinces in Canada collecting NMSC data in their registries, which could then be extrapolated to the entire country – this is not ideal but better than in most other countries. The majority of these cases occurred in men in the agriculture or construction industries – similar to what was seen in Australia.

For policy changes we need economic data. In collaboration with health economists, Assistant Cheryl Peters and colleagues used their estimates to calculate the economic burden of occupational skin

cancer per year to be \$16.1 million for BCC and \$18.1 million for SCC (total \$34.2 million). Canada is the only country that has provided economic data on the burden of NMSC attributable to occupational exposure to solar radiation to date.

There was a discussion around the lack of notification of NMSC globally, which is required in order to provide more accurate cost estimates on the economic burden of occupational skin cancer and support policy change.

Dr. Jim Muir, Dermatologist ACD. „Was it from work or leisure? Medicolegal assessment of skin cancer, challenges in determining skin cancer due to occupational exposure.” Pre-recorded presentation.

We live in a time where recreational skin exposure is extremely common, which makes distinguishing between occupational and recreational skin exposure difficult. In the 1980s, Australia introduced the ‘Slip slop slap’ campaign, which has been a successful public health campaign. Nowadays you see surf lifesavers wearing long sleeve tops and schools adopting a ‘no hat no play’ policy.

Medicolegal assessment in Australia includes determining the work-place injury, reported mechanism of injury (e.g., solar damage), the level of impairment due to the injury, and dermatologists are asked whether we consider employment to be a significant factor to this injury. The issue is that the difference between ‘significant’ and ‘not significant’ is subjective. Also of note is that workers tend to put more emphasis on recreational exposure as opposed to occupational exposure and often mis-remember recreational exposure. Therefore, taking a thorough history is important.

Prof. Swen Malte John. “Occupational UV exposure and skin cancer – the European Experiences.”

NMSC estimates (2022) for EU-27 was almost 248,000 new diagnoses – 8.3% of total estimated new cancer cases and around 8,500 deaths – 0.7% of total cancer deaths. These official figures (which have meanwhile been removed from the EU Commission’s website) are the result of gross underreporting. The true incidence is estimated to be at least ten times as high. In many European countries, occupational UV exposure is an acknowledged carcinogen associated with skin cancer; recently, further European countries have introduced skin cancer by solar UVR as an occupational disease (Switzerland, Romania, Belgium, Austria). This important development was accompanied and supported by the EADV’s “Healthy Skin@Work europrevention” Campaign, from which also the multistakeholder summits originated. However, still the issue is under reporting of occupational NMSC. For example, in Italy, reporting on Actinic Keratosis and NMSC by work place exposure is legally required yet physicians are not doing so. We need notifications to change policies and we need physicians to notify diagnoses but there are no incentives for them to do so.

In Germany, insurers use the Wittlich’s formula to determine if solar radiation is regarded an occupational disease or is not [5, 6]. If additional work exposure is > 40 % of lifetime UV exposure, cancer risk is expected to be doubled and thus, occupational exposure is relevant and occupational cancer is acknowledged. Dr. Marc Wittlich led the German GENESIS UV dosimetric exposure study, which measured the solar UVR exposure workers are receiving in different outdoor work environments across 250 professions and 1,000 workers [7]. In some professions, workers were receiving UVR exposures of up to 8-10 SED/day against WHO’s tolerable risk of 1.0-1.3 SED/day.

Some great research by Prof. David Whiteman showed that melanomas developing at different body sites are associated with distinct patterns of sun exposure, e.g., head and neck melanoma patients

are more likely to have occupational sun exposure and less likely to have recreational sun exposure compared to trunk patients. We need to expand on this research.

WHO's recent study reports that 1 in 3 deaths for NMSC are due to occupational exposure [8, 9]. WHO's International Agency for Research on Cancer has UVR (UV A, UV B, UV C) radiation listed as a Group 1 Carcinogen. In 2022, the ILO published criteria to be considered in the diagnosis and prevention of the diseases specified in the ILO List of Occupational Diseases (revised 2010) which includes diseases caused by optical radiation [10].

However, the EU Commission's recommendation of 28 November 2022 concerning the European *Schedule of Occupational Diseases* has skin cancer caused by tar, soot, pitch etc. recognised as an occupational disease, but solar UVR is not listed. Indeed, it was squamous cell carcinoma in chimney sweeping boys with exposure to polycyclic hydrocarbons in tars, soot, pitch in the 18th century, where occupational skin cancer was first described. Happily, the tradition of the chimney boys has been abandoned. Thus, it would be time for the European *Schedule of Occupational Diseases* to take notice of the most relevant *current* carcinogen causing skin cancer: UVR [8].

The call to action to protect outdoor workers from sun cancer by solar UV radiation exposure was launched after the 2nd multistakeholder summit and included recommendations for:

- Policymakers to improve legislative frameworks
- Doctors to report/notify, improve diagnostic accuracy and support workplace surveillance/screening
- Employers / Social dialogue to monitor exposure and implement prevention
- Cooperation between patient advocacy groups, health professionals, and social dialogue

Workplace Practice in Action

MODERATOR: Adjunct Assoc. Prof. Craig Sinclair

Ms. Jo Crotty, Spring Hill Queensland, Australia. "Danger Sun Overhead program delivering education and awareness on UV exposure as a workplace hazard."

Ms. Crotty established Danger Sun Overhead in 2010 after losing her husband to melanoma as a result of occupational sun exposure during his career as a construction worker. Danger Sun Overhead delivers education and awareness training to outdoor workers in sun safety and has delivered their program to over 80,000 workshop attendees in workplaces across Australia. The issue they find is that outdoor workers are not enacting the behaviour we require them to i.e. slip slop slap. The program is designed to give workers the tools and education to change their sun safety behaviour, specifically encourage behaviour change towards prevention, early detection, and self-checks. The organisation was also involved in developing scanyourskin.org/risk-prediction-tool which is communicated through the programs they deliver. Lastly, Danger Sun Overhead has partnered with the building and construction industry and unions to advocate for employers to play a bigger role in sun safe behaviour of their workers.

Dr. David Hughes – Chief Medical Officer, Australian Institute of Sport. "Sport - a High Risk UV Setting".

High performance sport involves long hours of training which exposes athletes to prolonged UVR exposure. Cultural issues in particular sports are barriers to sun safe behaviours e.g., in cricket it is

acceptable to wear long sleeves but in female beach volleyball the international federation said no to bike shorts for females. The difficulty of successful sun safe policy implementation comes when balancing training optimisation and sun safe behaviours. Athletes must prepare for their competitive environment in order to perform during the event.

Targeted education of both individuals and rule-makers alike is needed to remove these behaviours from sport. In 2023, the Australian Institute of Sport (AIS) launched a Sun Safe Sports position statement with partners to highlight the risk that UV radiation presents in Australia for athletes and support staff; current skin cancer epidemiology in athletic populations; the effectiveness of prevention strategies; and practical recommendations for how Australian sporting codes can act to safeguard their athletes, coaches, officials, volunteers, spectators, and other personnel involved in sport. The goal of this position statement is to assist sporting organisations to recognise the inherent risk of UVR exposure in their sport and provide guidance on how to implement sun safe practices.

Sport organizations have a choice to make. Do we wait until we get a serious, advanced stage melanoma or do we get on the front foot now, prioritize sport participants and prevent a health catastrophe? Individual and organizational measures are both needed to be working in unison to have the best policy. Cultural change is hard to make, but sport CEOs and Chief Medical Officers have a duty to ensure that athletes are provided with a safe training environment

Dr. John Orchard, Chief Medical Officer, Cricket Australia. “Managing skin cancer risk of Australian cricketers.”

Cricket Australia and the Australian Cricketers Association take sun safe behaviour seriously, which includes a culture of wearing protective equipment and sunscreen. Cricket Australia also pays for regular screening by dermatologists. In the last 12 months, Cricket Australia had 3 melanomas and 2 BBC/SCCS out of 300 players – which is high. Interestingly, while footballers biggest fear is concussion, for cricketers, it is skin cancer, with several high-profile cricketers in the past being diagnosed or even losing their lives to skin cancer. Role modelling is important, especially to influence sun safe behaviours at the community level.

Panel Discussion – Mr. Sam Short Olympic Swimmer and previous melanoma patient, Dr. David Hughes and Dr. John Orchard, “Sun protection and early detection in sport.”

The issue in high performance sport is that sun safe behaviour cannot be seen to interfere with winning; with it taking a melanoma scare to change behaviour. We need to target sports at the leadership level (CEOs, Boards) and at the community/junior level (parents; associations).

Prof. Peter Soyer leads the Australian Centre of Excellence in Melanoma Imaging and Diagnosis (ACEMID), which has implemented 15 3D total body imaging cancers across Australia. As the use of artificial intelligence and other technologies in early skin cancer detection advances, there is a real opportunity to improve early detection and thus improve patient outcomes.

Lastly, Brisbane will be hosting the Olympics in 2032. Acknowledging that Queensland is the capital of skin cancer in the world, would it not be great if we could use this opportunity to advocate for a SUN SAFE OLYMPICS, BRISBANE 2032.

Legal Perspectives

MODERATOR: Ms. Emma Glassenbury

Ms. Janine Lees – QLD Office of Industrial Relations. “Using a Risk Management Approach to address exposure to Ultraviolet Radiation in the workplace.”

Ms. Lees provided an overview of the Australian legislative landscape, whereby SafeWork Australia develops policy, but the individual states and territories regulate this policy. Queensland’s work health and safety legal framework includes: the Work Health and Safety Act 2011; the Work Health and Safety Regulation 2011; and Codes of practice. The Act places the primary health and safety duty on the business owner or employer and the Codes provide the detail on how to manage work health and safety risks generally, including using a risk management approach.

Just under 200 workers are killed at work each year in Australia with another 120,000 workers being compensated for a work-related injury. Cancer represents a very small number of the claims in Australia, with an average of 11 accepted claims for malignant melanoma and 18 for carcinoma in situ of skin per year.

Skin cancers are regarded as long latency or long onset diseases which are by their very nature harder to raise the profile of compared to hazards which may cause immediate or imminent injury or illness. In the past few years, Australia has seen the re-emergence of silicosis, another long onset disease, which has led to the establishment of a national registry. Perhaps a national NMSC registry is possible in Australia?

Mr. Carl Moseling, Principal Lawyer, Insurance Division, McInnes Wilson Lawyers. “Skin cancer - a legal perspective on employer liability.”

In Queensland, the *Workers’ Compensation and Rehabilitation Act 2003* sets out the requirements for entitlement to compensation. In general terms these are: (1) There must be a ‘personal injury’; (2) The injury must arise out of, or during the course of, employment; and (3) Employment must be “a” significant contributing factor to the injury. It is important to note that employment needs only to be “a” significant contributing factor to the development of the injury and not “the” or “only” factor.

The employer has a non-delegable duty of care to employees. They must be on guard for reasonably foreseeable and/or not insignificant risks; implement reasonable countermeasures to guard against such risks; take reasonable care for the safety of employees; reasonably train, instruct, direct and warn employees in relation to the performance of their duties; and establish, maintain and enforce a reasonable system of work.

Whether a worker’s skin cancer arose out of, or during the course of, employment is a question of both factual evidence and expert medical evidence. The worker bears the onus of proof to establish, on the balance of probabilities, that it is more probable than not that the worker suffered an ‘injury’ for which they are entitled to the payment of compensation or benefit as allowed for and regulated by the Act. To claim a breach of duty, a worker must show that the employer knew or ought to have known of the risk (foreseeability); that the risk was not insignificant; and in the circumstances, a reasonable person in position of the employer would have taken the precautions. Therefore, it is

advised that any worker wanting to claim compensation for skin cancer associated with occupational sun exposure in Queensland should engage legal assistance.

International perspective

MODERATOR: Renee Carey (Curtin University, WA)

Dr. Emilie van Deventer. World Health Organisation (WHO), Geneva. “World Health Organisation’s (WHO) Perspectives.” Virtual presentation.

WHO and ILO recently published joint estimates on the global burden of occupational skin cancer generated from a systematic review and meta-analysis [11]. The estimates highlighted that nearly 1 in 3 deaths from NMSC are caused by working under the sun and 1.6 billion workers (28% of the global working population) were exposed to solar ultraviolet radiation while working outdoors in 2019; with the majority being male. Further, the estimates establish occupational exposure to solar ultraviolet radiation as the work-related risk factor with the third highest attributable burden of cancer deaths globally, behind asbestos and silicosis.

From this research, WHO calls for more action to protect workers from hazardous outdoor work in the sunlight. Calling on governments to implement new policies and labour laws that protect outdoor workers from sun-induced skin cancer. WHO, ILO, the World Meteorological Organization and the United Nations Environment Programme recently launched the [SunSmart Global UV App](#) that outdoor workers can use to estimate their exposure to solar ultraviolet radiation.

Dr. Shengli Niu, Occupational diseases section, International Labour Organization (ILO), Geneva. “Skin cancer as an occupational disease – the ILO perspective.” Virtual Presentation.

Skin cancer associated with occupational UV radiation is listed as an ILO occupational disease. ILO has published guidance notes to provide information and criteria to be considered in the diagnosis and prevention of the diseases specified in the ILO List of Occupational Diseases (revised 2010) [10].

The guidance notes were published to support authorities, social security institutions, workers’ compensation funds, occupational safety and health professionals, physicians, employers and workers, and persons in charge of recording, notification, prevention, and compensation programmes for occupational diseases.

Dr. Shengli Niu called for greater measures to support the prevention of exposure of workers to UV radiation. Diseases that are associated with increased exposure to a carcinogen at work need to be recognised to support preventative measures and to enable the appropriate compensation of workers as a result of this exposure.

Prof. Min Zhang. Department of Environmental and Occupational Health, Peking Union Medical College (PUMC), Beijing, China. “Occupational UV exposure and skin cancer – the Chinese Experience.”

Occupational health has been prioritized by the Healthy China Action Plan (2019-2030) as one of its 15 major health special campaigns. The key instrument in the Chinese occupational health

regulatory system is the Law of the People's Republic of China on the Prevention and Control of Occupational Diseases. Under this law, the reporting and notification of occupational diseases are based on the Catalogue and List of Occupational Diseases in China (revised 2013), with skin cancer induced by ionizing radiation included on the List.

In 2019, the Occupational and Environmental Health Committee was established under the National Association of Health Industry and Enterprise Management (Prof. Min Zhang is the funding Director). In close collaboration with ILO, Prof. Zhang's team introduced a series of international instruments and technical tools in China. Since 2019, they have developed practical publications for the agriculture and construction industries; built capacity and capability across professional networks and the primary healthcare sector; and raised public awareness of the importance of heat stress and solar UV radiation through public communication campaigns.

As part of the Healthy China Action Plan (2019-2030), China will : (i) Continue to monitor the progress of international policies; Promote international guidelines and tools in China; (ii) Strengthen international communication and collaboration; (iii) Develop the national definition and occupational exposure limits on outdoor workers; (iv) Modify the national occupational limits on UV exposure; and Advocate for the ratification of key ILO conventions, such as Safety and Health in Agriculture Convention, 2001.

Wrap up and Global Call to Action

Prof. Swen Malte John and Adjunct Assoc. Prof. Craig Sinclair.

There is a lot of current research on how to prevent UVR induced occupational skin cancer and the education of workers, but the barrier is the implementation of this knowledge into practice. Moreover, climate change has accelerated the skin cancer epidemic timeframe, whereas progress on prevention, worker's education, early detection, treatment and compensation is slow. We must act now if we want to stop the epidemic!

Prof. Swen Malte John summarized the key takeaways from the summit:

This 3rd Multistakeholder Summit focused on highlighting the challenges in UVR induced skin cancer prevention and diagnosis as an occupational disease. It highlighted that the burden of NMSC among workers is often underestimated due to the lack of reporting. While Australia was noted for its leading efforts in promoting safe sun behaviours in workplaces, it was acknowledged that there is still a long way to go.

The importance of accurate data for estimating the prevalence of skin cancer was stressed, along with the need for better notification systems since skin cancer by solar UVR is the third most frequent occupational cancer [8]. There is also the challenge of distinguishing between occupational and recreational UV radiation exposure. However, solutions are at hand [5, 6], and since 2015 in routine use e. g. in Germany.

The real challenge is how can we make work-places safer across the globe when the occupational skin cancer burden in workers according to the official figures in many countries is almost invisible (quite like UV radiation)?

There was discussion around broadening the definition of "workplace" to include settings like sports, and the potential to leverage major sporting events, such as the Olympics, to raise awareness about sun safety – with the goal that this would extend from sports into the wider community.

Workers' compensation for occupational skin cancer associated with UVR varies across countries. In Australia, a worker is advised to seek legal advice, whereas, in some European countries there is a statutory accident insurance body that may provide the worker with appropriate compensation.

Prof. Swen Malte John then outlined the next steps after the Summit:

- Minutes of this Summit will be provided to all participants.
- An updated **Global Call to Action to Protect Outdoor Workers from Skin Cancer by Solar Ultraviolet Radiation Exposure (2024)**[3] will be circulated for review and feedback.
- An updated **Position Statement on Improved protection of outdoor workers from solar ultraviolet radiation** [2] will be prepared. Participants are welcome to contribute, please contact Prof. Swen Malte John if you would like to be involved.
- The group will reconvene in 2025 to keep up the momentum and to discuss further steps.

Next Meeting

The 4th Multi-Stakeholder Summit on Occupational Skin Cancer is scheduled to take place **4 April 2025, 17.30 – 19.00** in conjunction with the **11th World Congress of Melanoma & 21th EADO Congress** (3-5 April 2025) in **Athens, Greece**.

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