

Intersun International Advisory Committee meeting

28-29 June 2017 – WHO, Geneva

1 Overview

There were around sixty attendants, including a few who participated by WEBEX. Key points arising from the meeting were:

- There was a webinar to launch the updated WHO booklet on sunbeds and public health interventions to manage them.
- There is interest in developing a research agenda for UV and health, but financial contributions would be needed to advance this.
- Non-melanoma skin cancers (now being referred to as “Keratinocyte Carcinomas” – KCs) continue to be of concern due to the high incidence and costs.
- The WHO database of national regulations on sunbeds is now available online.
- Although not discussed in this report, there were several discussions on visible light, in particular in relation to LED sources and new technologies involving these and potential effects on health, and a general feeling that the scope of WHO’s programme should be broadened to include these.

2 The Intersun programme

An overview of the programme is presented in an appendix to this report.

Key achievements over the past year include:

- An updated booklet on sunbeds has been published (discussed below).
- Information about national sunbed regulations is now available on the WHO Global Health Observatory (GHO)¹. As information about sub-national legislation (eg the Auckland bylaw) is not supported on the GHO, this is included as information notes in the tables (click on the red italic *i* superscript).
- Country pages have been set up for the countries (including New Zealand) which have provided information and annual reports².

3 Health effects and control

Adele Green provided an overview of UV and skin cancers. Some of the key points were:

- The true incidence of non-melanoma skin cancers (now preferably referred to as “Keratinocyte Carcinomas” – KCs³) is unknown.
- There are large variations in the ratio of age-standardised MM incidence to mortality around the world (eg around 10 in the USA, compared with 5 in Norway).
- The incidence of MM in most countries continues to rise, but appears to be falling in Australia (notably in under 24s).

¹ <http://apps.who.int/gho/data/node.main.SUNBEDS?lang=en>

² <http://www.who.int/uv/global-project/en/>

³ Karimkhani et al. It’s time for “keratinocyte carcinoma” to replace the term “non melanoma skin cancer”. J Am Acad Dermatol 2015;72:186-7.

- Screening of the general population tends to find a lot of false positives, and targeted screening is more effective.

Dr Mariotti of the WHO talked about eye problems related to UV. These tend to be concentrated in developing countries, especially at high altitudes and rural areas. However, there are also greater risks associated with outdoor activities and with some drugs (eg tetracycline, birth control pills, diuretics). Several factors are now acting to increase the risks of UV-caused eye diseases, including an aging population, more outdoor activities and the risk of counterfeit sunglasses which do not provide the protection claimed for them.

There was also some further discussion of NMSC/KC, essentially noting how these were an important occupational disease in outdoor workers which is easily preventable. The use of blue light to show pre-cancerous skin conditions, and whether sunscreen has been applied properly, was mentioned.

4 Sunbeds

There was a webinar to launch the new WHO booklet on *Artificial tanning devices – Public health interventions to manage sunbeds*.

4.1 European SCHEER opinion

The European SCHEER (Scientific Committee on Health and Environmental Risks) report on *Biological effects of UV radiation related to health with particular reference to sunbeds for cosmetic purposes* has now been published. The report concludes that UV is a complete carcinogen as it both initiates (through DNA damage) and promotes (through immunosuppression) cancer. The beneficial effects of using a sunbed, such as Vitamin D production, are outweighed by the risks, and alternative sources of Vitamin D are readily available. There is no safe limit of UV exposure.

A recent study by Ghiasvand⁴ et al, using data from a Norwegian cohort, has been published since the SCHEER report was finalised and supports the conclusion that skin cancer risks increase when sunbeds are first used at a younger age.

4.2 Economic burden of sunbeds

A paper on the economic burden of melanomas associated with sunbed use in Europe will be published soon. There is little data available on the costs of malignant melanoma, but it indicates that there are large differences between countries. They ranged from €1,751 per patient per year in Romania to €12,611 per year in Luxembourg. These estimates, however, do not take into account treatments using some of the newer, expensive drugs available. An overall cost was not provided in the talk but based on the presentation slides appears to be around €26M per year.

4.3 WHO booklet

The updated WHO booklet on sunbeds and public health interventions to manage them was published just before the Intersun meeting. Two complementary infographics are also available⁵. The booklet discusses the health risks arising from sunbed use and the policy options available to

⁴ Ghiasvand et al. Indoor Tanning and Melanoma Risk: Long-Term Evidence From a Prospective Population-Based Cohort Study. *AJE* 185(3) 2017, 147-156.

⁵ <http://www.who.int/phe/infographics/ultraviolet-radiation/en/>. The infographics are also at the end of this report

manage them, ranging from education to regulation to a ban. It also provides information to counter many of the arguments given to support sunbed use.

4.4 National experiences

Several countries spoke about their approaches to managing sunbeds.

In Argentina, one province tried to regulate sunbeds but the regulation was withdrawn following an uproar as most beds could not meet the requirements. An alternative approach is now being pursued, albeit slowly.

The Australian ban was greatly assisted by the publicity given to a young lady who died of melanoma which she attributed to sunbeds. There is still some private ownership and some states want to ban the import of sunbeds as there are illegal operators working from home.

The Belgian Superior Health Council recently recommended that sunbeds be banned. There is high sunbed use in Belgium, and it is estimated that this would prevent 6,000 malignant melanoma deaths over 50 years, and reduce healthcare costs by €238M. Other regulations are also under consideration. There has been a lot of reaction to these proposals, with some saying that it will restrict freedoms and that the sun cannot be banned, while others would support a ban. There is also concern that a ban would lead to the formation of a “grey” sunbed industry. While sunbed operators say that they are doing everything they can to comply with existing requirements, surveys find that 94% are not.

Germany has had sunbed regulations in place for several years, covering aspects such as user age, staff training, warning notices and limits on irradiance levels. A major challenge is that enforcement varies widely across the country, and competes with other health areas for manpower. There is some discussion about sunbed regulation being a symptom of a “nanny state”. Nevertheless, the number of operators is decreasing.

Norway also has regulations, covering similar aspects to Germany. Inspection and enforcement is carried out by local authorities, but local authority staff are trained by the radiation protection agency, who also provide UV measurement equipment. There is also a voluntary training course for operators. Staff and equipment have been specifically allocated to this work, and its effectiveness will soon be evaluated in an inspection campaign.

I also spoke about the work carried out in New Zealand by Public Health Units and the results found so far.

In discussion, it was noted that sunbed use in the US has dropped by 50% since the introduction of a 10% tax. It is not clear whether this is a result of the tax, education measures or a downturn in the economy. There was also a suggestion that it would be useful to have a single point of access for Regulatory Impact Statements prepared as part of sunbed regulations in different countries – this would help other jurisdictions considering sunbed regulations.

5 Prevention measures

5.1 UV Index

A paper on the workshop has been submitted to Health Physics for publication. As mentioned last year, as a result of the 2015 Melbourne UV workshop it was concluded that for now no changes to the UV Index should be made. While there is animal evidence that exposure to UV at low UVI

intensities can be harmful, there is no human epidemiology evidence showing effects at UVI <3, and at these low exposures repair mechanisms are effective.

5.2 Sunscreen

There is a wide variation in the use of sunscreen around the world (eg 25% in the USA, 80% in Scandinavia). Major predictors of sunscreen use are gender (females use it more than males), age, education and experience of skin cancer. Most people use less than half the amount required to achieve the rated SPF.

In proper allergy tests, less than 1% of the population has a true allergy to sunscreen. (Others suffer irritation.) Use of sunscreen shows no association with Vitamin D status.

There has been only one randomised trial investigating the effectiveness of sunscreen in skin cancer prevention, which found a reduced incidence of MM and SCC but no effect on BCC.

5.3 Shade

A 2001 Action Plan for cancer Prevention in Toronto directed the city to provide shade in public places and facilities. This has been achieved with a mix of audits to estimate the costs of implementation, and the development of policies, guidelines and standards. The work has involved a range of expertise, including dermatologists, arborists, landscape architects, educators, planners, public health staff etc. Consideration of shade is now well established and considered to part of the normal process of developing facilities.

6 Reports from collaborating centres and international organisations

International organisations and collaborating centres presented brief reports. Highlights of these included:

6.1 International organisations

6.1.1 *International Commission on Illumination (CIE)*

The CIE has reaffirmed its action spectra for erythema and NMSC. The Vitamin D action spectrum will be reviewed soon as there are some concerns with this. The CIE has issued a technical report on the use of sunbeds to maintain Vitamin D levels and concluded that their use cannot currently be recommended as the appropriate exposure cannot be assessed.

6.1.2 *International Commission on Occupational Health (ICOH)*

In 2016 ICOH held a training school on occupational skin cancers which included papers on the evaluation of UV exposure for use in epidemiology studies, and the legal recognition of occupational skin cancer in different countries. ICOH will hold a conference in December 2017 on the need for effective solar UV protection for workers. There will be sessions on UV at the 2018 ICOH world congress (April/May 2018).

6.2 Collaborating centres

WHO collaborating centres are institutions such as research institutes, parts of universities or academies, which are designated by WHO to carry out activities in support of the its programmes⁶.

⁶ For more information on collaborating centres see www.who.int/collaboratingcentres/cc_historical/en/

6.2.1 ARPANSA

The UV section of the ARPANSA website has been updated to make the data more easily accessible⁷. “Pop up” UV monitoring stations will be deployed at functions over the coming year, for example at the Commonwealth Games.

6.2.2 Sécurité Solaire

A new project covering occupational exposure has been started.

6.2.3 Bundesamt für Strahlenschutz (BfS - German Federal Office for Radiation Protection)

UV has been added to an existing project on climate change, using “structural prevention” to give people the opportunity to escape heat and also avoid UV exposure. This could be done by providing shade, adapting work flows to avoid work outdoors when there are high temperatures or UV etc. The work is being done under the auspices of the “UV Prevention Alliance”⁸. A position paper *Prevention of Adverse Health Effects of the Sun – Structural Prevention in the City and in the Countryside* has been published and will be available soon in English. The paper sets out the goals and the measures to be taken to achieve them. Christina Mackay from Victoria University spoke to the Alliance in July on the New Zealand experience in shade provision.

6.2.4 Cancer Council Victoria

The Cancer Council Victoria Sunsmart app has had 280,000 downloads, and 40% of the users have the sun protection alert times enabled. The app received a favourable review in the *Lancet Oncology*, and on average users open it 1.7 times per day.

Following the sunbed ban some backyard sunbed operators have started operating, and these are being monitored and prosecuted (two prosecutions to date, with more expected).

Some people have raised concerns about the ineffectiveness of sunscreen, and the publicity on social media has required some defence of sunscreen use. The products about which complaints have been raised have met the Standards, but people generally do not use enough and some report allergic reactions.

6.2.3 Public Health England (PHE)

The Advisory Group on Non-Ionising Radiation published a report on UV, Vitamin D and health in March 2017⁹.

Work on UV exposures of airline pilots is continuing, and on 11 flights out of 194 the UVA dose exceeded recommended limits by a factor of up to six times.

A programme has started to encourage outdoor workers to cover up. Agricultural shows will be targeted.

7 Way forward

The development of a research agenda for UV was discussed, and considered to be useful. The process for this is to canvass experts around the world to try and prioritise the topics, then convene an expert group to review the priorities and develop research questions and rationales. This would

⁷ www.arpansa.gov.au/services/monitoring/ultraviolet-radiation-monitoring/ultraviolet-radiation-index

⁸ http://www.bfs.de/EN/topics/opt/uv/protection/alliance/alliance_node.html

⁹ <https://www.gov.uk/government/publications/ultraviolet-radiation-and-vitamin-d-the-effects-on-health>

require support from States to fund convening the expert group – at least US\$20,000 would be needed.

It was noted that while there is a wealth of UV measurement data readily available, information on protective methods is not so easily found. The BfS representative also expressed interest in a database of structural prevention measures from around the world.

Appendix – The Intersun programme

The WHO Intersun programme was started in 1992 (motivated by research showing ozone depletion), with the mission to reduce the global burden of disease caused by exposures to UV. Artificial UV sources are now included in the scope of the programme.

WHO provides a secretariat for Intersun, whose activities include the preparation of fact sheets and monographs, and ensuring that such materials comply with WHO policies. Intersun does not undertake or commission research but could coordinate a research agenda to help ensure that research on UV and health is directed towards priority areas. The Intersun programme receives no WHO funding, and is funded entirely by monetary and in-kind contributions from States. In the past year only one financial contribution was received.

Appendix – sunbed infographics

Available at <http://www.who.int/phe/infographics/ultraviolet-radiation/en/>

SUNBEDS CAUSE CANCER

Sunbeds pose a risk for all people. The most vulnerable are **young and fair-skin people**.

10,000 + 450,000
MELANOMA CASES + NON-MELANOMA SKIN CANCER CASES

are due to sunbed use in Australia, Europe and the United States of America every year.¹

Young women are the most frequent users of sunbeds



The **younger** you start using sunbeds, the higher the risk of skin cancer

Sunbed use:

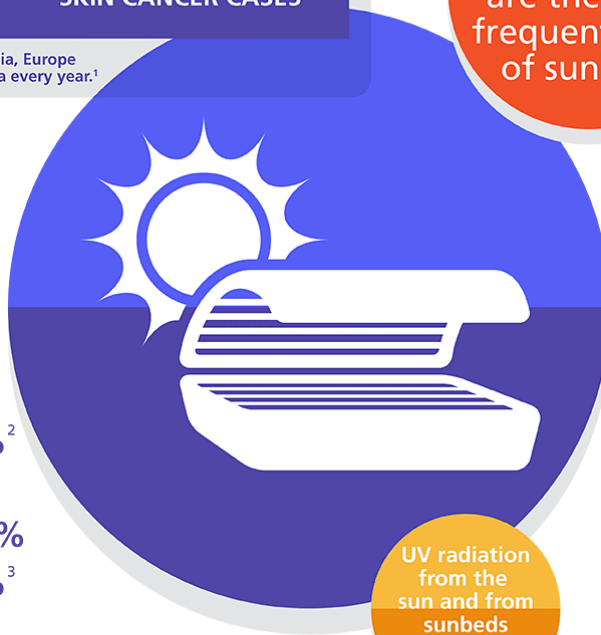
• **BEFORE AGE 35**

melanoma risk **60%**²

• **BEFORE AGE 25**

squamous cell cancer risk **102%**

basal cell cancer risk **40%**³



UV radiation from the sun and from sunbeds causes skin cancer

Other health effects of sunbed use:

cataracts



immune suppression



sunburn



premature skin ageing



1 Wehner MR, et al. International prevalence of indoor tanning: a systematic review and meta-analysis. *JAMA Dermatol.* 2014; 150(4):390-400.
2 Boniol M, et al. Cutaneous melanoma attributable to sunbed use: systematic review and meta-analysis. *BMJ* 2012; 345:e4757.
3 Wehner MR, et al. Indoor tanning and non-melanoma skin cancer: systematic review and meta-analysis. *BMJ.* 2012; 345:e5909.

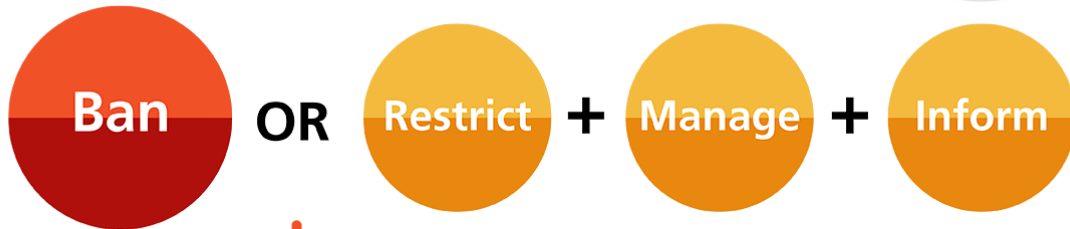


World Health Organization

MANAGING SUNBEDS



Policy measures can reduce health risks



Ban all sunbed services



Ban hire and sale of sunbeds for domestic use



Prohibit unsupervised access



Set a minimum age-limit on sunbed use



Restrict use of sunbeds by 'high risk' individuals



License tanning establishments



Restrict exposure



Require eye protection



Train sunbed operators



Impose taxes



Inform sunbed users on health risks



Display warning signs



Ban promotion of sunbeds

Enforce these policies to prevent health impact



World Health Organization