

Cancer Society of New Zealand's Submission to
the Department of Labour on the:

**“Proposal to add further occupational diseases
to Schedule 2 of the Injury Prevention,
Rehabilitation, and Compensation Act 2001.”**

December, 2006

Submission form – proposed additions to Schedule 2 of the IPRC Act

This public consultation is intended to seek opinion on the possible diseases for addition to Schedule 2 of the Injury Prevention, Rehabilitation, and Compensation Act 2001. The following questions are intended to guide your submission.

(2) Do you think any other work related diseases and causative agents should be added to Schedule 2? (these diseases must have a strong occupational link)

Diseases of the skin and eye which are related to excessive exposure to solar ultraviolet radiation in the occupational context.

(3) Reasons why you consider that this disease and its causative agent(s) should be added to Schedule 2:

Summary

Diseases of the skin and eye related to excess exposure to solar UV radiation should be added to Schedule 2 because 1) there is extensive evidence linking excessive ultraviolet (UV) radiation exposure to skin cancer and eye disease¹ and 2) these are already acknowledged as important occupational risks by the Department of Labour in its *Guidance notes for the protection of workers from solar ultraviolet radiation* (1994).

1.1 The Burden of Skin Cancer to New Zealand

Skin cancer is by far the most common form of cancer affecting New Zealanders.² Incidence and mortality rates in New Zealand are among the highest in the world.³ Around 300 New Zealanders die from skin cancer every year. There are also approximately 1,800 new melanoma cases and about 45,000 new non-melanoma skin cancer cases every year.⁴ These are cases for which the diagnosis is confirmed by laboratory test. There are possibly another 20,000 cases of non-melanoma skin cancer each year which are immediately treated, but for which the medical practitioner does not seek laboratory confirmation.

Our high rate of skin cancer is disturbing, especially as it is largely preventable.

Skin cancer has been linked through extensive epidemiologic evidence to excess exposure to ultraviolet radiation (UVR).⁵ A comprehensive range of scientific references in support of the case with respect to a range of skin and eye diseases are cited in Lucas, R. et al. (2006), *Solar ultraviolet radiation: global burden of disease from solar ultraviolet radiation*. Environmental burden of disease series, No. 13. WHO: Geneva. (This report is available either on-line or in hard copy from the WHO).

Although harmful exposure to ultra violet radiation (UVR) is the key risk factor common to all types of skin cancers, variation in the pattern of excess sun exposure, for example, whether it is episodic or cumulative, may differentially influence the risk of developing specific types of skin cancer.⁶

Skin cancer is also one of New Zealand's most costly cancers. The cost of melanoma and non-melanoma skin cancer (NMSC) to the New Zealand health system has been conservatively estimated at \$33M every year.⁷ This estimation does not take account of personal and social costs, such as individual and family suffering, or wider economic costs such as loss of income and workplace productivity.

1.2 Costs of Skin Cancer related to Occupational UVR Exposure

In Australia, non-melanoma skin cancer (NMSC) has been identified as the most costly burden to the health system, with around 2% of the population (370,000) treated for NMSC every year, which currently costs AUS\$420 million annually.⁸ In New Zealand that would equate to a burden of around 80,000 cases per year.⁹

Although skin cancer has been identified as one of New Zealand's most costly cancers, it is nevertheless difficult to isolate out the specific costs associated with involvement in outdoor work.

1.3 Why are New Zealanders at particular risk of skin cancer?

The high prevalence of skin cancer in New Zealand is consistent with aspects of this country's geography.¹⁰ In summer months, we receive more UV radiation because countries in the southern hemisphere lie closer to the sun in summer than countries in the northern hemisphere, and New Zealand's unpolluted atmosphere plus depletion of the protective ozone layer reduce the extent to which harmful UV rays are blocked from reaching the surface of the Earth. New Zealand

experiences up to 50% higher levels of erythema UV in summer months than those at comparable latitudes in the Northern Hemisphere.¹¹

It has been estimated that in high ultraviolet radiation (UVR) environments, such as New Zealand and Australia, exposure to solar UVR accounts for 90% of all skin cancers.¹² Our population is also predominantly fair skinned, with fair skin types at greater risk of developing skin cancer.

2.1 Outdoor Workers: An At-Risk Group for Skin Cancer

Outdoor workers are at increased risk of developing skin cancer, in particular, non-melanoma skin cancers, because of their prolonged, cumulative sun exposure.^{13 14} Non-melanoma skin cancers (NMSC) are twice as prevalent among outdoor than among indoor workers.¹⁵

Squamous cell carcinoma of the skin, in particular, is associated with chronic outdoor occupational exposure. In addition, workers who experience intermittent but intense occupational exposures (for example, mainly indoor workers who may sometimes be expected to work on-site, outdoors) may be at increased risk of other forms of skin cancer, such as cutaneous malignant melanoma and basal cell carcinoma.

Outdoor workers often spend long periods working outside during periods of peak ultraviolet radiation (UVR). Peak UVR times are between October and March, especially between the hours of 11am and 4pm. The Ultraviolet Index (UVI) measures the intensity of UVR. Daily UVR levels in different parts of New Zealand can be checked on NIWA's website (www.niwa.org.nz).¹⁶ Protection from the sun is advised when the UVI is 3 and above. Between October and March the UVI registers 6 (**high**) and above almost daily and protection is essential during these times. During the height of summer, there are significant periods when the UVI is **very high** and/or **extreme**, that is 8 and above, and people are advised to stay indoors or seek shade. For outdoor workers, this is often not a possibility.

Outdoor workers have less control than the general population regarding UVR exposure levels as the nature of their work requires that they be outdoors. While exposure to UVR can be minimized through appropriate workplace policies and practices, the sun cannot be controlled in the same way as other workplace exposure hazards.¹⁷

For the above reasons, skin cancer represents a significant occupational risk for outdoor workers in New Zealand. It is important that the extent of occupational risk is acknowledged with specific

regard to the New Zealand environmental and demographic context (where UVR levels are high to extreme during the summer months and the population has predominantly fair skin) and that the inclusion or omission of skin cancer as an occupational disease within other countries' OSH classifications may not be a relevant or useful precedent for New Zealand.

2.2 Outdoor Workers: How Many?

In New Zealand, outdoor workers comprise a numerically significant group. A study has been undertaken in the greater Auckland region investigating outdoor workers' (1092 respondents) beliefs, attitudes and practices with respect to the prevention of NMSC.¹⁸ As part of this study it has been calculated that New Zealand has a total of 246,153 outdoor workers across a range of occupations. This equates to approximately 14.28% of the total workforce working outdoors.¹⁹

2.3 Exposure limits

Exposure limits for UV radiation for the avoidance of acute health effects have been published by the International Commission on Non-Ionizing Radiation Protection.²⁰ However, as the World Health Organization reports in *Ultraviolet radiation as a hazard in the workplace*, there is no lower UVR exposure limit for the "induction of chronic effects such as skin cancer".²¹

3. Skin Cancer Control: A Government Priority

The control of skin cancer has been identified as a government priority. In 2003, the Ministry of Health released the New Zealand Cancer Control Strategy (NZCCS).²² Two of the seven key primary prevention objectives have implications for skin cancer prevention programmes and initiatives among the outdoor workforce. These include the need to '*reduce the number of people developing skin cancer due to UV radiation exposure*' and to '*reduce the number of people developing occupational-related cancers*'.²³ Included among the broad areas for action are 'strengthening the legal framework to protect workers', reducing exposure and raising awareness of carcinogens in the workplace, 'supporting OSH research into occupational exposures' and 'improving the reporting of occupational cancers.'

4. Cancer Society of New Zealand's Recommendation

Ultraviolet radiation is a known carcinogen and represents a major workplace hazard for outdoor workers. It is well known that exposure to solar UVR is the major cause of skin cancer and a known

cause of various forms of eye damage. For these reasons, the Cancer Society is of the opinion that diseases of the skin and eye which are related to excessive exposure to solar ultraviolet radiation in the occupational context should be added to Schedule 2 of the Injury Prevention, Rehabilitation, and Compensation Act 2001.

Thank you for considering our submission. We would be happy to provide further information regarding this issue, if needed.

Yours sincerely

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¹ Lucas, R. et al. (2006), *Solar ultraviolet radiation: global burden of disease from solar ultraviolet radiation*. Environmental burden of disease series, No. 13. WHO: Geneva.

² Reeder, A.I. (2004). *Report to the Skin Cancer Steering Committee to inform development of the Skin Cancer Control Programme Plan 2005*. Social & Behavioural Research in Cancer Group, Department of Preventive and Social Medicine, Dunedin School of Medicine.

³ International Agency for Research on Cancer. (2001). *Clobocan 2000: Cancer incidence, mortality and prevalence worldwide, version 1.0*. IARC CancerBase No. 5. Lyon: International Agency for Research on Cancer.

⁴ O'Dea, D. (2000). *The costs of skin cancer to New Zealand*. Wellington School of Medicine, University of Otago: Wellington.

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- ⁵ International Agency for Research on Cancer, (1992). *IARC Monographs on the Evaluation of Carcinogenic Risks to Humans. Solar and Ultraviolet Radiation*. Vol. 55. Lyon: International Agency for Research on Cancer.
- ⁶ Armstrong, B. (2004). How sun exposure causes skin cancer: an epidemiological perspective, in *Prevention of skin cancer*, D. Hill, E. D.R., and J.M. Elwood, (Editors). Dordrecht: Kluwer Academic Publishers.
- ⁷ O’Dea, 2000.
- ⁸ Cancer Council Australia, *National cancer prevention policy 2004-06*. 2004, Cancer Council Australia: Camperdown, NSW.
- ⁹ Reeder, 2004, p. 29.
- ¹⁰ UV Radiation and its effects – An Update. Report of the NIWA UV Workshop, Dunedin, April, 2006.
- ¹¹ McKenzie, R., Connor, B. and Bodeker, G. (1999). “Increased summertime UV Radiation in New Zealand.” *Science* 285: pp. 1709-1711.
- ¹² Armstrong BK. How sun exposure causes skin cancer. In: Hill D, Elwood JM, English DR, Eds. *Prevention of Skin Cancer*. Dordrecht: Kluwer Academic Publishers, 2004.
- ¹³ Woolley, T., Buettner, P.G. & Lowe, J. (2002). Sun-related behaviors of outdoor working men with a history of non-melanoma skin cancer. *Journal of Occupational and Environmental Medicine* 44(9): 847-854.
- ¹⁴ Cancer Council Australia. (2004). *National cancer prevention policy 2004-06*. Camperdown, NSW: Cancer Council Australia; World Health Organization. (2003). *Ultraviolet radiation as a hazard in the workplace*. Geneva: WHO.
- ¹⁵ Green, A., et al. (1996). Skin cancer in a subtropical Australian population: incidence and lack of association with occupation. The Nambour Study Group. *American Journal of Epidemiology* 144(11): 1034-40.
- ¹⁶ See SunSmart website for UVI readings in different parts of New Zealand. www.sunsmart.org.nz
- ¹⁷ World Health Organization. (2003). *INTERSUN: The Global UV Project A Guide and Compendium. Reduce the burden of disease resulting from exposure to UV radiation while enjoying the sun safely*. Geneva: WHO.
- ¹⁸ McCool, J. et al. (2004). Outdoor workers perceptions of risk of developing non-melanoma skin cancer. Department of Occupational Medicine and Department of Health Psychology, University of Auckland. Funded by: Cancer Society of New Zealand (Wellington Division Inc.).
- ¹⁹ Communication with Principal Researcher, Dr Judith McCool.
- ²⁰ www.icnirp.de/documents/uv.pdf.
- ²¹ World Health Organization. (2003). *Ultraviolet radiation as a hazard in the workplace*. Geneva: WHO.
- ²² Ministry of Health. (2003). *The New Zealand Cancer Control Strategy*. Wellington: Ministry of Health and New Zealand Cancer Control Trust.
- ²³ Ministry of Health, 2003, pp. 27-29.