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**Recommendation of the Finnish, Swedish, Icelandic and Norwegian Radiation Safety Authorities regarding prohibition of sunbed/solarium services to people under the age of 18 years.**

Exposure to ultraviolet radiation (UV), including solarium use, can cause severe negative health effects. The Nordic authorities therefore advise against the use of sunbeds for tanning purposes since exposure of the general population to UV-radiation should be limited (Nordic Radiation Protection and Health Authorities, 2005).

A basic and internationally accepted principle for radiation protection is that any practice involving radiation must be justifiable, i.e. do more good than harm. The World Health Organisation based International Agency for Research on Cancer (WHO-IARC) has now classified UV-emitting tanning devices as “carcinogenic to humans” (IARC-News, 2009). This fact raises serious questions on the justification behind using sunbeds for tanning purposes.

Young persons below 18 years of age and UV sensitive people (skin type I – II) are strongly advised not to use sunbeds (Scientific Committee for Consumer Products, 2006; Nordic Radiation Protection and Health Authorities, 2005). There is a significant increased risk for developing cutaneous malignant melanoma associated with using sunbeds, particularly for those who start using sunbeds in their teens and twenties (IARC, 2006).

**Therefore the Finnish, Swedish, Icelandic and Norwegian Radiation Safety Authorities recommend regulation of tanning facilities open to the public that includes the prohibition of use, sale or hire of sunbeds for people below 18 years of age.**

Further information including the rationale, relevant data and a discussion concerning recommendations on commercial sunbed services to people under the age of 18 years is provided in the Appendix.

- Finnish Radiation and Nuclear Safety Authority (Säteilyturvakeskus, STUK)
- Swedish Radiation Safety Authority (Strålsäkerhetsmyndigheten)
- Icelandic Radiation Safety Authority (Geislavarnir Ríkisins)
- Norwegian Radiation Protection Authority (Statens strålevern)

## **18 year age limit for using sunbeds/solaria for tanning purposes**

Exposure to ultraviolet radiation (UV), including solarium use, can cause severe negative health effects in the population. Behaviour patterns and tanning habits among the general population is of concern regarding exposure to natural solar UV; the Finnish, Swedish, Icelandic and Norwegian authorities as well as other health-agencies and cancer prevention organisations are working, using information tools, towards the goal of reducing skin cancer incidence. However, with respect to artificial tanning and the use of sunbeds, though both information and legislative tools have been used and will continue to be used, stricter legislation is needed.

A working group within the IARC met in June 2009 to reassess the carcinogenicity of types of radiation previously classified as “carcinogenic to humans” (Group 1) and to identify additional tumour sites and mechanisms of carcinogenesis. The IARC released the results of this work on 27 July 2009 (IARC-News, 2009). With respect to solaria the working group changed the classification of the use of UV-emitting tanning devices to Group 1 i.e., “carcinogenic to humans”. The scientific basis for this decision is that a comprehensive meta-analysis concluded that the risk of cutaneous melanoma increased when use of tanning devices started before 30 years of age (IARC, 2006). The IARC also concluded that limited data suggested that the risk of squamous cell carcinoma increased when indoor tanning facilities were first used by an individual as a teenager. In addition, the IARC concluded that artificial tanning confers little if any protection against solar damage to the skin and does not grant protection against vitamin D deficiency. Sunbeds and accompanying exposure schedules are optimized for tanning purposes and not for vitamin D production (IARC, 2008).

An excessive use of sunbeds by young people in the Nordic countries has been documented and for many individuals the use of sunbeds starts well before the age of 18 (Køster et al., 2009; T. Sigurdsson, unpublished surveys by IRSA, 2004-2009; MMI, 2004; TNS Gallup, 2009). Sunbed usage has also been linked to increasing rates of erythema, particularly in the youngest age groups (SSM, 2009; MMI, 2004; TNS Gallup, 2009)<sup>1</sup>.

Several recognised international organisations (The International Commission on Non-Ionizing Radiation Protection (ICNIRP, 2003); The Scientific Committee for Consumer Products (SCCP, 2006); WHO (WHO, 2003); and the European Society for Skin Cancer Prevention (EUROSKIN; Greinert et al., 2001) recommend that qualified personnel should guide customers with respect to tanning. In addition, the WHO and the British Committee on Medical Aspects of Radiation in the Environment (COMARE, 2009) recommend national regulation with restricted access or prohibition for those under the age of 18 years and prohibition or a reduction of the number of sunbeds intended for unsupervised use and/or self-determined operation in commercial outlets.

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<sup>1</sup> In Denmark, 59% of the girls and 42% of the boys in the age group 15-19 had used solaria the last 12 months compared to 29% in the age group 15-29 (Køster et al. 2009). 48% of the girls and 22% of the boys reported using solaria before the age of 14. In Iceland, 20% in the age group 12-15 report visiting solaria in the previous 12 months according to annual questionnaires (2004-2009) (T. Sigurdsson, IRSA). In Norway, 26% of the girls and 16% of the boys had used solarium before 15 years of age, and in the age group 15-24 years those who had used solarium the last year increased from 24% to 55% from 2004 to 2009 (MMI 2004 and TNS Gallup 2009). A yearly questionnaire regarding sun-habits among the Swedish population has revealed that sunbed burns are frequent and on the rise in the age group 18-24 years, increasing from 13% in 2005 to 22% in 2008 (SSM 2009). In Norway, those experiencing erythema increased from 1/3 to 1/2 of the users from 2004 to 2009.

The Norwegian, Swedish, Finnish and Icelandic regulations require written exposure schedules to be present for the customers and a poster advising against solarium use for those under the age of 18 years. The Norwegian Radiation Protection Authority has performed several inspection surveys (Nilsen et al., 2008; NRPA Årsmelding, 2008) which indicate a low level of compliance to national regulations. For example, 50 % of the surveyed tanning facilities in Norway did not inform customers against the use of solaria for those below 18 years of age. Moreover, UV measurements collected during 2008 in 210 different sunbeds showed that permitted radiation limits were exceeded in more than half of the sunbeds studied, and that “extreme” values (more than twice the radiation limit) were observed in 5 % of the sunbeds.

Several countries (see Reference #19), such as France, Spain, Portugal, Belgium, Scotland, Germany and 6 out of 7 states in Australia have, in the period 1997 - 2009, started to regulate use of sunbeds by national laws which prohibit use of sunbeds for persons under 18 years of age. In addition, several other European countries are in the process of legislating an 18 year age limit. The Low-voltage Directive 2006/95/EC and the European standard EN 60335-2-27/A1 (10/2008) on "*Household and similar electrical appliances - Safety - Part 2-27: Particular requirements for appliances for skin exposure to ultraviolet and infrared radiation*" already requires that the usage instructions contain a statement that UV appliances are not to be used by persons under the age of 18 years. However, the voluntary ‘certification’ of sun-studios and requirements for trained staff to control usage and ascertain no use by young persons failed in Germany: Only 750 out of 5000 sun-studios were certified between 2003 - Sept 2008, leading to the 18 year age restriction by law (Bundesministerium, 2009).

Prohibition of the use of solaria for those under the age of 18 years is expected to reduce the number of skin burns and the risk of skin cancer. This will in turn lead to reduced costs for the society and reduced suffering for the individual.

In conclusion it is the view of the Finnish, Swedish, Icelandic and Norwegian Radiation Safety Authorities that the health risks associated with use of sunbeds for those under the age of 18 years far outweigh any perceived benefits, the majority that of which are psychological and cosmetic. The Finnish, Swedish, Icelandic and Norwegian Radiation Safety Authorities therefore recommend that the use of commercial sunbeds for tanning purposes should be prohibited for people below 18 years of age.

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