

A resume of the COMARE report on sunbed legislation in the UK

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UV INDUCED DNA DAMAGE: EFFECTS IN CELLS & ORGANISMS

- **Sunlight and light from sunbeds causes DNA and tissue damage.**
- **DNA damage causes mutation.**
- **Mutation causes cancer and ageing.**
- **All skin cancer is increasing in the UK.**
- **9,500 new cases of melanoma in 2005 (and rising) in the UK.**

HEALTH IMPLICATIONS OF ULTRAVIOLET (UV) EXPOSURE

- **The severity and consequences of UV damage varies considerably between individuals.**
- **Effects of UV exposure may take years to develop and persist permanently.**
- **High dose rate UV exposure is one of most important risk factors for melanoma.**
- **Skin type, increased numbers of moles and family history are also melanoma risk factors.**
- **UV exposure can also result in immunosuppression and eye damage, including cataract formation.**
- **Skin ageing**

HEALTH RISKS AND PERCEIVED BENEFITS RESULTING FROM SUNBED USAGE

- **Modern sunbeds are capable of producing irradiation equivalent to Mediterranean sunlight.**
- **First exposure to sunbeds before the age of 35 increases the risk of melanoma.**
- **Extensive sunbed use is also associated with photoaging of the skin.**
- **UV exposure can synthesise vitamin D; however the use of sunbeds is not recommended to increase vitamin D levels. Dietary supplements are a preferred alternative source.**
- **Psychological benefit.**

SUNBED USE IN CHILDREN AND YOUNG ADULTS

- **Data are accumulating reporting the use of sunbeds by children and young adults in both Europe and the USA.**
- **Reported sunbed exposure is rare in the first decade but rises rapidly in the second decade.**
- **Girls are more frequent users than boys.**
- **Childhood sunbed use is more common in relatively deprived areas.**
- **Childhood sunbed use is more common in households where adults also use sunbeds.**

USAGE OF SUNBEDS IN THE UK

- **The number of commercial outlets is increasing.**
Of particular concern is the growth of unstaffed outlets, unsupervised sunbeds, non-traditional outlets and coin-operated sunbeds.
- **The strength of commercial sunbeds is increasing.**
- **The distribution of sunbed locations varies geographically with particularly high concentrations in some Local Authorities**
- **Concentration is higher in deprived urban areas even after taking into account their more densely concentrated populations.**
- **Lack of registration of commercial outlets hampers monitoring trends in their numbers, type, power and distribution. Thus the potential risk they pose to the population cannot be monitored.**
- **A Mintel report in 2007 on the ownership and use of beauty aids showed that 4% of a sample of adults aged 16 or over own a sunbed/solarium or sun lamp and 7% use one.**

APPROACHES TO THE CONTROL OF SUNBEDS IN THE U K AND OTHER COUNTRIES AND ASSOCIATED LEVELS OF BUSINESS COMPLIANCE

- **Specific legislation on sunbed use exists in Austria, Belgium, Finland, France, Norway, Portugal, Spain, Sweden, USA, Australia and New Zealand.**
- **Legislation was passed in Scotland in 2008; however the UK does not have national legislation.**
- **Control can be through legislation, voluntary code, licensing or guidance.**
- **Poor compliance is found against a variety of control measures where strict legislative controls do not exist.**

Conclusions

- **Exposure to UV radiation can induce DNA damage and mutation; all types of skin cancer including melanomas; other diseases such as cataracts, pterygium and cold sores; and immunosuppression.**
- **The incidence of skin cancer is continuing to rise. Skin cancers are now the most common form of cancer in the UK, with 9,500 malignant melanoma cases and at least 76,000 non-melanoma skin cancers recorded in 2005.**
- **High dose UV exposure is not always associated with visible sunburn, but is associated with increased risk of melanoma at all ages of life. Increased melanoma risk is also associated with skin phenotype, melanocytic naevi (moles) and with family history.**

Conclusions

- **According to the International Agency for Research into Cancer first exposure to sunbeds before the age of 35 increases the risk of malignant melanoma by 75%. It also increases the risk of squamous cell carcinomas.**
- **Cumulative exposure to sunbeds is associated with photoaging.**
- **There is evidence of sunbed use by children and adolescents in the UK. Girls are more frequent users than boys. Childhood and adolescent usage has been recorded in both supervised and unstaffed (coin operated) commercial outlets.**

Conclusions

- **Irradiance from sunbeds can vary greatly. Most are type 2 or 3 based on the British Standard, BS EN 60335-2-27:2003.**
Type 3 is the only class intended for unskilled use and therefore suitable for general use in commercial sunbed outlets.
In recent years, sunbeds have been produced that are too powerful for the type 3 classification. The Scientific Committee on Consumer Protection recommended in 2006 a maximum erythemally weighted irradiance of 0.3 W m^{-2} i.e. 11 standard erythema doses (SEDs) per hour, a significant percentage of current sunbeds exceed this.
The British Standard recommends no more than 150 SED p.a.
- **COMARE cannot recommend any cosmetic use of sunbeds, however the British Photodermatology Group recommended in 1990 a limit of 20 sessions per year for practical reasons.**

Conclusions

- **The health risks associated with sunbed use outweigh the perceived benefits.**
- **The majority of perceived benefits from sunbed use are psychological and cosmetic.**
- **The use of sunbeds is not associated with added protection for sun exposure.**
- **Vitamin D may be synthesised in the skin via exposure to sunbeds; this is dependent on the level of UVB emissions from the sunbed, which can be variable.**
- **The practice of using sunbeds to synthesise vitamin D is not recommended due to the potential carcinogenicity and the high frequency of acute side effects (e.g. erythema).**
- **Nutritional supplements are the preferred source for increasing vitamin D levels.**

Conclusions

- **The number of commercial sunbed outlets in the UK is estimated at 8,000 by the Sunbed Association. This number is increasing. Only a fifth of outlets are believed to be registered with the Sunbed Association.**
- **The distribution of sunbed locations varies geographically with particularly high concentrations in some Local Authorities.**
- **There are concerns that commercial outlets are particularly concentrated in low-income areas.**
- **Currently there is no national registration scheme for commercial outlets.**

Conclusions

- **The level of control over the use of sunbeds varies between countries and can exist through legislation, voluntary code, licensing or guidance.**
- **In 2008, the Public Health (Scotland) Act was passed, which prohibits the use of sunbeds by under 18s, prohibits the use of unsupervised sunbed parlours and requires operators to provide information to users.**
- **The UK, as a whole, does not have national legislation specifically aimed at regulating the cosmetic use of sunbeds.**
- **The Health and Safety Executive have issued guidance on the use of UV tanning equipment, which covers the sunbed operators and gives advice for clients.**
- **A number of local authorities have introduced licensing regimes for specific cosmetic treatments that can include sunbeds.**

Recommendations

Regulation is required on the cosmetic or commercial use of sunbeds, other than that clinically prescribed or carried out under medical supervision.

Currently in the UK, legislation is only in place in Scotland.

The following recommendations of COMARE may exceed this legislation and therefore should be considered by all UK health departments and government departments with an interest in this area.

Recommendation 1

- **The use of sunbeds by under 18s is prohibited.**
This is in line with both the Public Health etc. (Scotland) Act 2008 and the WHO recommendations and the proposed legislation by the Department of Health and Children for Ireland.
There is evidence to suggest an increase in the risk of melanoma in later life associated with the use of sunbeds by under 35s, especially teens. Sunbeds usage by teens is also associated with increased risk of squamous cell carcinoma.
- **Introduce an age restriction of 18 years, brings the use of sunbeds in line with a number of other restricted goods e.g. tobacco and alcohol.**
- **The sale or hire of sunbeds to under 18s should be prohibited**

Recommendation 1

- **Prohibit unsupervised use and/or self-determined operation of sunbeds in commercial outlets.**
- **All staffed commercial outlets should be licensed and registered, including registration of the types and power of machines on the premises. Licensing will allow control and checks of adherence to standard. Registration will permit monitoring of trends and distribution of commercial outlets and of machine types.**
- **Legislation should include a requirement for commercial outlets to ensure adequate protective eyewear is provided for users. The use of protective eyewear by clients should be compulsory.**

Recommendation 1

- **Detailed written information on the health risks associated with the use of sunbeds must be provided to users and should be clearly visible on machines, both in commercial settings and for home use.**
- **Informed consent should be obtained from the clients prior to use.**
- **The use of sunbeds by persons with at risk phenotypes should be discouraged.**
- **That commercial outlets and sunbed retailers should be prohibited from using information promoting health benefits of sunbed use.**

Recommendation 1

- **All sunbeds should adhere to both the British Standard (BS EN 60335-2-27:2003) and the recommendations from the Scientific Committee of Consumer Products**
- **In particular, not exceeding a sunbed irradiance of 0.3 W m⁻².**

Recommendation 2

- **Inspections are carried out of commercial outlets to determine compliance with whatever level of regulation is imposed.**
- **Local Authorities have a duty to periodically inspect commercial outlets and are given the appropriate powers of entry to premises and access to relevant information (e.g. maintenance records, staff on duty, accident reports etc.). If licensing is enforced, the Local Authorities should be provided with sanctioning powers.**
- **The need for appropriate operator training is recognised, covering both the technology and safety of the sunbeds.**
- **Commercial outlets should be required to show Local Authorities that a standard level of competence is being met and that the outlet is staffed at all times with trained, competent personnel.**

Recommendation 3

Skin cancer is the UK's most common form of cancer and is rising. The budget for raising awareness of risk factors is inadequate.

- **Funding for such campaigns is appreciably increased and sustained.**

The incidence of basal and squamous cell carcinoma results in a substantial burden on the NHS for diagnosis and treatment; almost £58 million in 2002, compared with £13 million for melanoma. The costs of eye disease to which solar UV and sunbeds can contribute are also substantial.

- **Stronger publicity campaigns on the risks from UV exposure, and in particular sunbeds, are directed towards children, as users or potential users of sunbeds. Such campaigns could focus on photoaging effects from sunbeds to enhance the message.**
- **The appropriate authorities strictly review the advertising employed by the sunbed industry.**

Recommendation 4

- **Further research into sunbed usage and the risk and aetiology of malignant melanomas and non-melanoma skin cancers.**
- **Additional research into the potential and reported ocular damage resulting from the use of sunbeds without adequate eye protection.**
- **Population-based research should be undertaken to correlate skin damage and sunbed exposure (i.e. number of sessions, duration and strength of machine) and control for holiday exposure. Investigate socio-economic factors, access to sunbeds, age of use, where possible.**
- **Establish why some Caucasians insist on tanning and determine how behaviour may be changed.**

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