

The Skin-Express Project (Hudekspressen): Educating School Children in Sun Protection – A Pilot Study

DILJIT KAUR-KNUDSEN¹, IBEN MARIE MILLER², SHIVA YAZDANYAR² AND GREGOR B. E. JEMEC²

¹Department of Dermato-Allergology, Gentofte University Hospital, Niels Andersens Vej 65, DK-2900 Hellerup and ²Department of Dermatology, Roskilde Hospital, Denmark. E-mail: diljitkaur@gmail.com

Three first authors are the founders of Skin-Express (Hudekspressen)

Sun-bathing with the aim of getting tanned has become increasingly popular in Western countries during the last few decades. Exposure to the sun has unquestionable beneficial effects, such as vitamin D synthesis in the skin and emotional well-being, besides having positive effects on skin diseases such as psoriasis (1, 2). However, the hazardous effects of ultraviolet (UV) radiation on the skin are well-known, and therefore cautious behaviour needs to be exercised in the sun. Skin cancer (non-melanoma skin cancer and malignant melanoma), sun-induced eczema, ageing and sunburn are all conditions caused by solar UV radiation (3). The incidence of both non-melanoma skin cancer and malignant melanoma are increasing, but these potentially dangerous conditions can be prevented by cautious sun behaviour, and this is especially important among children and adolescents (4). Previous studies have shown that the education of children in sun protection can influence behaviour in the sun and thereby reduce the risk of sun-induced conditions (5, 6).

The Skin-Express Project (Hudekspressen) was initiated in October 2010 by three medical doctors with an interest in dermatology. The aim was to teach children in public schools about the harmful effects of the sun and how to protect the skin. The age groups chosen were 13–16 years, in the 7th to 10th grade in elementary school. The project was planned to run from early spring to the beginning of the summer holidays 2011. In March 2011 a letter explaining the aims of the project was sent to four large schools in Zealand, the Roskilde Local Authority. Replies were received from three out of the four schools.

The planned duration of a teaching session was one hour of interactive education, starting with a lecture about sun exposure and skin protection. The lecture focused on education mainly through visual presentations, e.g. illustrations of skin conditions. This type of communication was chosen in order to involve and accommodate the young people. A quiz followed the lecture, in which pupils had approximately 10 min to answer the questions. The answers were then discussed with the pupils by the teaching medical doctors. At the end of the session, leaflets about sun and UV radiation from the Danish Cancer Society and sunscreen samples were distributed among the pupils. The lecture and quiz were planned and prepared by all three medical doctors. This project was not supported financially and none of the medical doctors received a fee for the teaching.



Fig. 1. Founders of the Skin-Express Project (Hudekspressen). Diljit Kaur Knudsen (left), Iben Marie Miller (middle) and Shiva Yazdanyar (right).

From April to June 2011 a total of 11 classes (217 pupils) in 3 schools received teaching through the Skin-Express Project. The pupils received the education either one class at a time or several classes together, depending on the timetable for the classes on that particular day. In four classes the pupils were given the quiz both before ($n=80$) and after the lecture ($n=72$) in order to evaluate the effect of the teaching session. For all questions the students gave more correct answers after the lecture compared with beforehand (Table I). Obvious differences were seen following the intervention, with, for example, only 8% of the pupils being able to mention 3 harmful skin effects of the sun before the lecture, compared with 96% afterwards.

In all classes both pupils and teachers responded very positively to the teaching session. The pupils asked many questions during the session, which confirmed the relevance of the subject and illustrated that this type of communication appealed to the young generation. In general it was more beneficial to teach the pupils one class at a time compared with several classes at once, due to less noise in class, more time for questions, and more interaction with the pupils. Offering the teaching in the spring months had the obvious advantage that pupil's knowledge of the harmful effects of the sun was reinforced before the summer holidays, which, it is hoped, would make them conscious of safe sun behaviour (7).

It is planned to offer the Skin-Express teaching session to Danish elementary schools each spring, with the possibility of including more schools in the project depending on the interest from the schools and the availability of teaching medical doctors.

Table I. Quiz questions

	Before the lecture, % correct answers	After the lecture, % correct answers
1. Mention three harmful skin effects of the sun	8	96
2. Is it good for the skin to use sun-tanning beds before tanning in the sun?	88	100
3. What time should you stay out of the sun: 10–12 am, 12–3 pm, or 4–6 pm?	85	100
4. What are the main causes of skin cancer?	23	43
5. How much sunscreen should be used for the whole body?	59	93

The authors have no conflicts of interest to declare.

References

1. Harari M, Novack L, Barth J, David M, Friger M, Moses SW. The percentage of patients achieving PASI 75 after 1 month and remission time after climatotherapy at the Dead Sea. *Int J Dermatol* 2007; 46: 1087–1091.
2. Shahriari M, Kerr PE, Slade K, Grant-Kels JE. Vitamin D and the skin. *Clin Dermatol* 2010; 28: 663–668.
3. Balk SJ. Ultraviolet radiation: a hazard to children and adolescents. *Pediatrics* 2011; 127: e791–e817.
4. Oliveria SA, Saraiya M, Geller AC, Heneghan MK, Jorgensen C. Sun exposure and risk of melanoma. *Arch Dis Child* 2006; 91: 131–138.
5. Buller DB, Reynolds KD, Yaroch A, Cutter GR, Hines JM, Geno CR, et al. Effects of the Sunny Days, Healthy Ways curriculum on students in grades 6 to 8. *Am J Prev Med* 2006; 30: 13–22.
6. Loescher LJ, Buller MK, Buller DB, Emerson J, Taylor AM. Public education projects in skin cancer. The evolution of skin cancer prevention education for children at a comprehensive cancer center. *Cancer* 1995; 75: 651–656.
7. Jemec GB. Primary prevention of malignant melanoma: to know may not be enough. *J Am Acad Dermatol* 1993; 28: 799–800.

CME MCQ – 30

Are All Melanomas Dangerous?

The following questions are based on the Review article in *Acta Acta Derm Venereol* 2011; 91: 499–503 by Carsten Nørgaard et al; Are All Melanomas Dangerous?

The increased incidence of cutaneous malignant melanoma (CMM), together with only minor changes in mortality, has brought into question the existence of a melanoma epidemic.

The discrepancy between incidence and mortality suggests that most newly diagnosed melanomas have indolent behaviour. The review summarizes the most recent epidemiological findings regarding the incidence of CMM, mortality, Breslow thickness and clinical stage.

1. Indicate statements below that are in accordance with the results found in the review:
 - A. All but one of the articles found a significant increase in incidence CMM.
 - B. All articles found a significant increase in incidence for both sexes.
 - C. All articles except one found a lower or non-significant increase in mortality.
 - D. All articles found the increase in incidence to be constant during the period examined.
 - E. Articles indicating increased mortality mainly applied to people under the age of 30.
2. Indicate conclusions and findings relevant to CCM in the elderly patients:
 - A. Elderly patients have the highest proportion of the nodular subtype of CMM characterized by its very rapid growth.

- B. Immune dysfunction in elderly individuals may further contribute to the increase in cancer mortality.
- C. Lives can probably be saved by more intensive screening of older individuals.
- D. Nodular subtype of CMM is very easy to diagnose by dermoscopy.
- E. CMM is very often overdiagnosed in elderly individuals.

3. Indicate the main conclusion(s) drawn in the review:
 - A. Lives can probably be saved by more intensive screening of all individuals.
 - B. Lives can probably be saved by more intensive screening of older individuals.
 - C. Intensive screening of young people with no risk factors appears to be obsolete.
 - D. The existence of a dramatic melanoma epidemic is very likely.
 - E. Increased public awareness increases the detection rate of early CMM.
 - F. The articles reviewed confirmed described trends of a steady increase in incidence of CMM.

Recommended answers:
1. A, B, C; 2. A, B, C; 3. B, C, E, F