

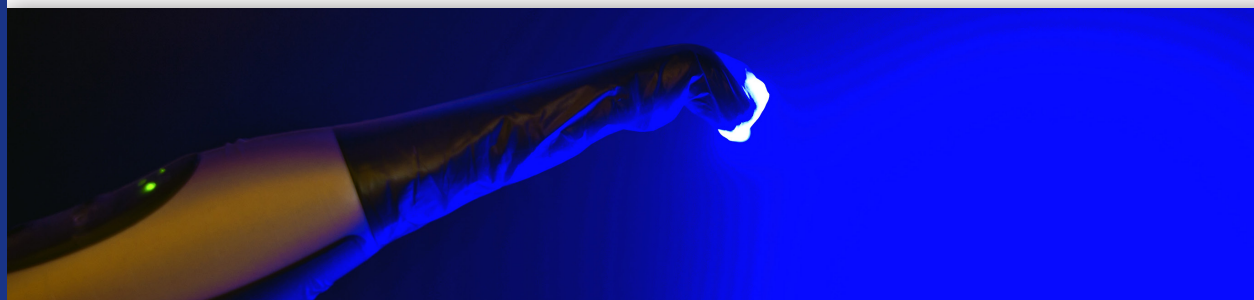
Are LED Lights a Hazard to Human Health?



Ellen Bruzell

Senior Scientist, dr. scient.

There is no evidence that the general public is at risk of direct adverse health effects from Light Emitting Diodes (LEDs) when the lights (lamps for lighting and displays) are in normal use, the European Commission stated in a recent published Opinion. The Scientific Committee on Health, Environmental and Emerging Risks (SCHEER), having a NIOM scientist as expert member, authored the Opinion.



Vulnerable populations are children and the elderly

SCHEER's Opinion further concluded that

- For LEDs, the vulnerable populations are children and the elderly who may exhibit higher sensitivity to blue light due to glare, flicker or phantom-array effects.
- There is insufficient research on the health effects of LED lighting, and many topics should be investigated further, particularly the effects of flicker.
- Since the use of LED technology is still evolving, the SCHEER would like to see continued monitoring of the risk of adverse health effects from long-term LED use by the general population.

The Opinion did not consider the hazard from LEDs in occupational use such as dental curing lamps. For such devices protective measure is still necessary.

Sometimes the work NIOM performs to ensure patient safety is undertaken outside the borders of the Nordic countries. In June, the European Commission adopted a final, comprehensive Opinion detailing the potential health risks from LEDs to which NIOM Scientist Ellen Bruzell has contributed through her participation in a Working Group of the SCHEER.

SCHEER provides opinions to the European Commission on multidisciplinary questions concerning emerging or newly identified health and environmental issues that require a comprehensive assessment of any risks to consumer safety or to public health, or on related issues not covered by other European Union risk-assessment bodies.

Each expert in the working group provided individual contributions to particular chapters of the Opinion and all experts critically read, commented on and suggested amendments to the whole report. Bruzell's contribution related to radiation effects on skin, in particular the two chapters in Annex III: Malignant effects of optical radiation on healthy skin and Photodermatoses.

Reference:

Web summary: https://ec.europa.eu/health/scientific_committees/leds_en

Factsheet: https://ec.europa.eu/health/sites/health/files/scientific_committees/docs/citizens_leds_en.pdf

Final Opinion: https://ec.europa.eu/health/scientific_committees/consultations/public_consultations/scheer_consultation_05_en

SCHEER assesses risks to consumer safety and public health



Northern Lights comes to Oslo

NIOM was host and local organiser for the sixth annual Northern Lights International Conference in Oslo on 30th and 31st July.

The two main topics were bioactive materials and light transmission through ceramics and composites. The aim of these conferences is to bring together leading international experts to discuss current topics in restorative dentistry. After previous conferences, consensus statements have been published on procedures for light-curing and on bulk-fill restorations.

Professor Richard Price, Department of Dental Clinical Sciences, Dalhousie University in Halifax, Canada, started these annual international symposia in 2012 and has since been in charge of both the organisation and the scientific programme. This year marked the first time the symposium has been organised outside Canada. Participants came from fifteen countries on four continents and represented major manufacturers, universities and research centres. Editors of dental journals were prominent participants.

Together with Professor Price, NIOM CEO, Professor Jon E. Dahl, welcomed the participants, saying it was a privilege for NIOM to host the 2018 conference:

- The Northern Lights meeting is unique in that scientists and other experts from industry and academia meet and discuss topics related to restorative dentistry. Like previous meetings, I expect that consensus will be reached on important aspects of restorative dentistry that will benefit the dental community and patients worldwide.

NIOM scientists Hilde M. Kopperud, Ellen Bruzell and Frode Staxrud participated with Kopperud and Bruzell contributing scientific presentations:

Kopperud spoke on the topic "In-situ light-cured vs. computer-aided manufactured (CAM) composites". She revealed that even CAM-composites release monomers, although in very small amounts, far less than traditional light-cured materials. Bruzell gave a joint presentation together with Professor Gottfried Schmalz from the Universities of Regensburg and Bern on antimicrobial photodynamic treatment (aPDT) in dentistry. Bruzell focused on the basic principles of aPDT.



Main topics: bioactive materials and light transmission through ceramics and composites

A meeting place for academia and industry

NIOM
Nordic Institute of
Dental Materials
Sognsveien 70A,
NO-0855 Oslo, Norway.
phone: (+47) 67 51 22 00
e-mail: niom@niom.no
www.niom.no