Sag

Titel: WHO NIR IAC web meeting 2022, 7/6-9/6
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Dokumenter

Aktnr.	Doknr.	Titel	Brevdato	Type
6	8860555	WHO IAC 2022 Presentations	05-07-2022	I, Indgående
4	8599561	Dagsorden for mødet + referat fra sidste møde (2)	03-06-2022	I, Indgående
0	8599562	IAC Agenda 2022_FOR CIRCULATION	03-06-2022	I, Indgående
0	8599563	DRAFT Minutes 26th IAC and 10th Optical meetings June 2021_for circulation	03-06-2022	I, Indgående
3	8542327	WHO International Advisory Committee (NIR) Confirmation	30-05-2022	I, Indgående
2	8542324	SAVE-THE-DATE: WHO IAC meeting on non-ionizing radiation - 7-9 June 2022	16-02-2022	I, Indgående
1	8542322	WHO IAC meeting on NIR - June 2022	02-02-2022	I, Indgående

From: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Sent: 05-07-2022 22:34:50 (UTC +01)
Cc: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Subject: WHO IAC 2022 Presentations

****** WHO International Advisory Committee (IAC) on Non-Ionizing Radiation and Health ******

Dear IAC representatives,

Hope you are all doing well and keeping healthy!!

We have now collected the presentations of the various speakers at the 2022 WHO IAC meeting held 7 to 9 June, which can be found at the following Dropbox site:
https://www.dropbox.com/t/KxjND6ULU9s6fYpM

Thanks to all who have already sent the annual EMF and UV national activity reports. For those who have not yet, it is not too late □□.

Kind regards,
Emilie

Dr Emilie van Deventer
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World Health Organization

From: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Sent: 03-06-2022 19:02:22 (UTC +01)
Cc: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Subject: RE: Mandatory Zoom pre-registration: WHO International Advisory Committee meeting (7-9 June 2022; 13:00-14:30 CEST)

****** WHO International Advisory Committee (IAC) on Non-Ionizing Radiation and Health (EMF and Optical Radiation) ******

Dear IAC representatives,

Ahead of the three sessions scheduled for Tuesday to Thursday from 13:00 to 14:30 (CEST), please find enclosed

- The draft minutes from the 2021 IAC meeting – *for your review/revision*
- The meeting agenda

Please make sure to **register to Zoom at the latest by 16:00 (CEST) Monday 6 June** (see information in email below - note that it is a two-step process requiring approval).

Thanks to the Members States who have provided their annual reports on activities related to electromagnetic fields and optical radiation, respectively. The deadline for these is **2 September 2022**.

Looking forward to meeting you online next week.

Kind regards,
Emilie

Dr Emilie van Deventer
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World Health Organization

From: VAN DEVENTER, Tahera Emilie
Sent: Monday, May 30, 2022 10:52 AM
Cc: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Subject: Mandatory Zoom pre-registration: WHO International Advisory Committee meeting (7-9 June 2022; 13:00-14:30 CEST)

Dear Participant,

You are invited to a Zoom Meeting.

When: JUNE 7, 8 and 9, 2022 13:00 (Geneva Time)
Topic: WHO International Advisory Committee (NIR)

Register in advance for this Meeting:
https://who.zoom.us/meeting/register/tJEoce-ppzIoG9YNAoU-UQwBKVXelmdwtNcM

After registering, you will receive a confirmation email containing information about joining the Meeting.

Kind regards,
Emilie

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INTERNATIONAL ADVISORY COMMITTEE MEETING ON NON-IONIZING RADIATION
Online meeting

AGENDA - Tuesday 7 June 2022 (all times in CEST)

Session on non-ionizing radiation

12.45	***Login to meeting***	
13.00	**Opening of the meeting**	
	Welcome	*M. Neira, Director*
	Introduction of participants	
	Approval of the minutes of the 2021 NIR IAC meeting	
13.10	**Update on WHO and its Radiation programme**	*E. van Deventer*
13.25	**Non-ionizing radiation protection**	
	Update on the draft WHO Framework	*R. Tinker*
	Ethical and non-ionizing radiation	*A. Reis*
	Occupational exposures: Experience with implementing the EMF Directive	*P. Jeschke*
	Airborne ultrasound: Update of ICNIRP statement	*K. Karipidis*
	Discussion	
14.15	**General discussion**	
	NIR at the 6th European Congress on Radiation Protection	*P. Jeschke*
	Upcoming activities	
14.30	**End of session**	

INTERNATIONAL ADVISORY COMMITTEE MEETING ON NON-IONIZING RADIATION
27th Meeting of the International EMF Project
Online meeting

AGENDA - Wednesday 8 June 2022 (all times in CEST)

Session on Electromagnetic Fields (EMF)

12.45 ***Login to meeting***

13.00 **Opening of the meeting**
Welcome
Introduction of participants

13.10 **Update from international organizations on electromagnetic fields activities**

World Health Organization: Radiation and Health Unit	*E. van Deventer/J. Verbeek*
International Agency for Research on Cancer (IARC)	*I. Deltour*
International Telecommunications Union (ITU)	*R. Ubeda*
European Commission (DG Health)	*G. Gallo*
European Commission (DG Research)	*R. Araujo*

Discussion

13.50 **Update from non-governmental organizations on electromagnetic fields activities**

International Commission on Non-Ionizing Radiation Protection (ICNIRP)	*R. Croft*
International Commission on Occupational Health (ICOH)	*A. Modenese*
IEEE/International Committee on Electromagnetic Safety	*J. Keshvari*

14.05 **Review of recent health research activities**

Research review of laboratory studies	*M-R. Scarfi*
Research review of epidemiological studies	*I. Deltour*

Discussion

14.20 **Discussion of upcoming activities**

14.30 **End of session**

INTERNATIONAL ADVISORY COMMITTEE MEETING ON NON-IONIZING RADIATION
11th Meeting of the Optical Programme
Online meeting

AGENDA - Thursday 9 June 2022 (all times in CEST)

Session on Optical Radiation

12.45 ***Login to meeting***

13.00 **Opening of the meeting**
Welcome
Introduction of participants

13.10 **Update from international organizations on optical radiation activities**

World Health Organization	*E. van Deventer*
World Meteorological Organization (WMO)	*(TBC)*
United Nations Environment Programme (UNEP)	*S. Mylona*

13.30 **Update from non-governmental organizations on optical radiation activities**

International Commission on Non-Ionizing Radiation Protection (ICNIRP)	*N. Cridland*
International Commission on Occupational Health (ICOH)	*A. Modenese*
International League of Dermatological Societies (ILDS)	*L. French*
International Electrotechnical Commission	*J. Keshvari*
International Commission on Illumination (CIE)	*P. Blattner*

13.55 **Briefing on UV-C**

UV-C: Open research questions	C*. Baldermann*
Tackling safety issues of UVC devices: Singapore's experience	*K. Ang*

Discussion

14:20 **Discussion on WHO future priorities**

14:30 **Close of meeting**

Radiation and Health Unit (HQ/HEP/ECH/RAD)
International Advisory Committee Meeting on
Non-Ionizing Radiation

Online meeting, hosted by WHO, Geneva, Switzerland
Tuesday 8 June 2021

Rapporteur – Martin Gledhill, representative of the Ministry of Health of New Zealand

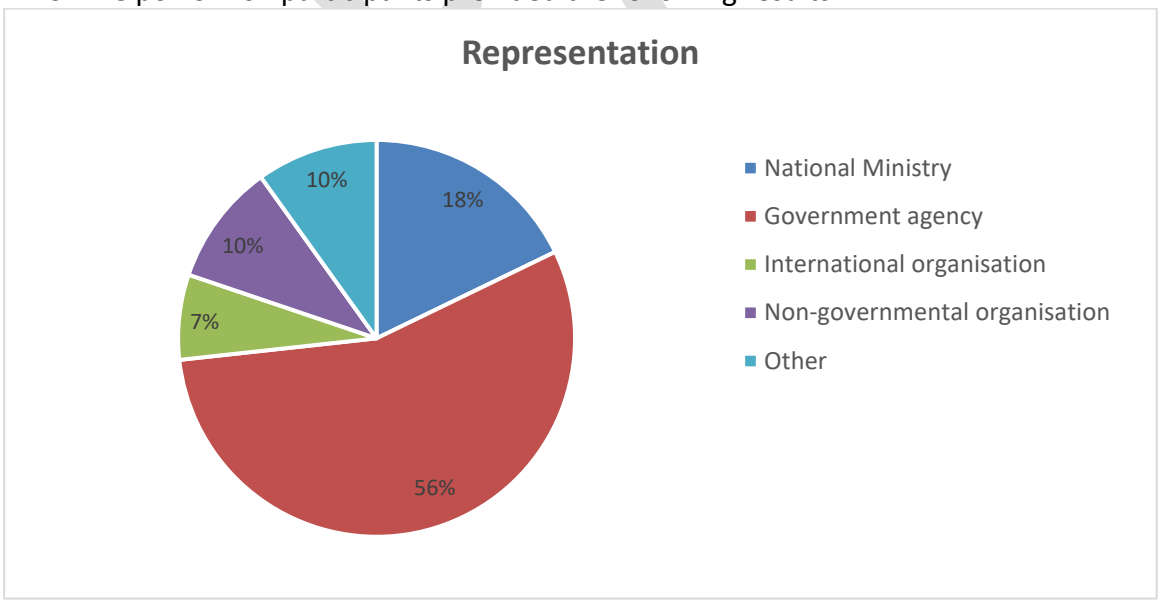
Tuesday 8 June

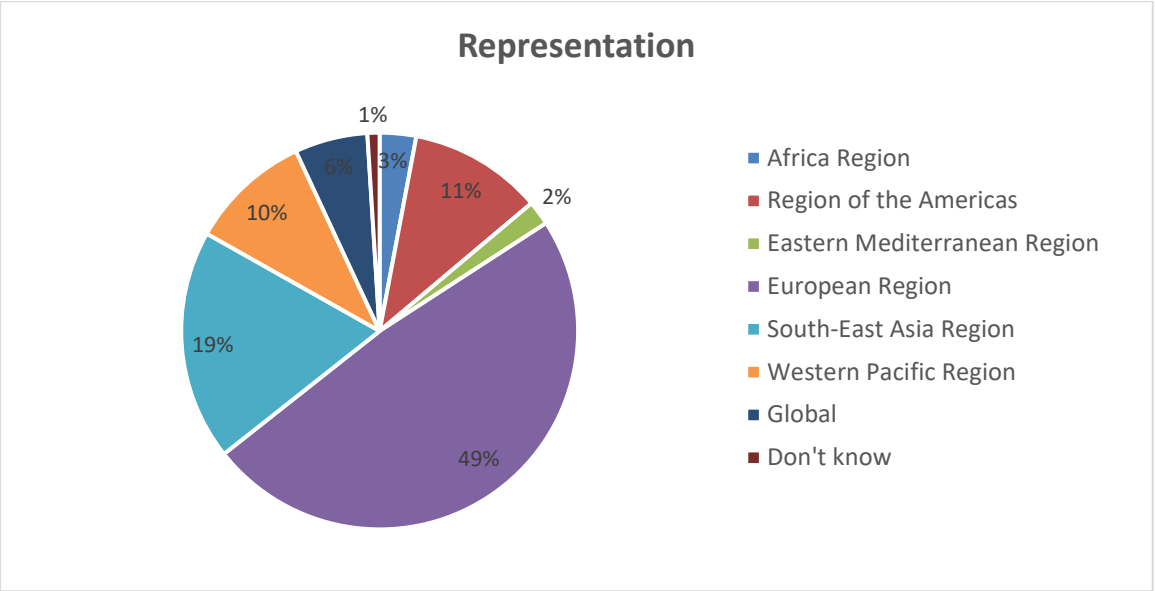
Session on non-ionizing radiation

Opening of the meeting

Due to the COVID-19 pandemic, the IAC meeting was again held online for the second time. Dr ***Maria Neira***, Director of the WHO Department of Environment, Climate Change and Health, welcomed participants and gave an overview of her Department's interests in risk factors from all environmental sources. WHO is at the forefront of the Covid-19 response, and is promoting a green recovery through the WHO Manifesto for a healthy recovery from COVID-19. This year marks the 25th anniversary of the WHO EMF Project, and some participants have attended all 25 meetings. It is also the tenth anniversary of the regular optical radiation meetings.

Overview of participants
An online poll of 104 participants provided the following results:





71% of participants had attended a previous meeting.

Update on WHO and its non-ionizing radiation programme

Emilie van Deventer invited participants to review the draft minutes of the previous meeting (circulated before this meeting) and send feedback by email or through the chat feature.

WHO continues to implement its 13th Global Programme of Work (2019-23). The recent World Health Assembly considered several resolutions linked to radiation, including some on preparedness and strategy for climate change. There is a Global Action Plan for the prevention of non-communicable diseases.

The Radiation and Health Unit has three professional staff and works in partnership with several international organisations, Collaborating Centres, NGOs and Member States. As part of the Covid-19 response, the Unit developed a rapid guide on chest imaging for Covid-19. Material was developed to assist with "infodemic" management on UV-C use for disinfection and myth-busters on Covid-19 and 5G. It also published a Framework for mental health and psychosocial support in radiological and nuclear emergencies, and launched a database on radon regulations.

Work on the framework for NIR protection has been slowed due to Covid-19 and other work being given priority. There was a presentation at IRPA-15 in January 2021, and a paper is being prepared for the Journal of Radiation Protection that will include important concepts such as safety culture and ethics. It is planned to circulate the draft framework for review by relevant stakeholders.

Emilie thanked the Collaborating Centres who had helped develop the agenda and dedicated the session to the memory of the late Professor Dr Wolfgang Weiss, the past Head of the Department of Radiation Protection and Health of the German Federal Office for Radiation Protection (BfS).

Culture and ethics in radiation protection

Radiation protection culture: An IRPA perspective (*Bernard le Guen, President, International Radiation Protection Association (IRPA)*)
IRPA has worked on radiation safety culture since 2008 and published principles in 2014. Radiation safety culture is defined by the attitudes, behaviours and actions of the people involved. Human mistakes are usually the result of failures in systems, processes and procedures.

Several key lessons were learned from other areas:

- From aviation - anyone with a safety concern can raise awareness and get the issue resolved before starting activities;
- From the nuclear industry – leaders and management are key to enhancing radiation safety culture;
- From health care – many near misses go unreported, an integrated management system is important.

A joint IRPA/IAEA/WHO/IOMP publication on radiation safety culture was built on the output from 8 workshops and was presented at IRPA 15. It focuses on how to enhance radiation safety culture in healthcare and covers all uses in medicine. Safety goes beyond protection. The factors that influence safety culture vary around the world. The key issues in establishing and maintaining a radiation safety culture are communication, education and training.

A common challenge to establishing a radiation safety culture is lack of resources. Other challenges varied between regions, but typically included the local culture and hierarchy, and poor follow-up to initiatives.

Radiation safety culture is closely connected to the quality of patient care. It is defined by the attitudes, behaviours and actions of its stakeholders towards radiation safety. A strong culture requires a strong organization and drivers include the management structure, resources, training and quality initiatives. The organizational structure defines how people interact and communicate. There are three key stakeholder groups: the professionals directly involved in healthcare; outside bodies involved in radiation safety (such as regulators); and patients, patient advocacy groups, carers and comforters. Manufacturers and equipment vendors also have an important role. A variety of tools is available to assess the radiation safety culture in healthcare. These not only measure the criteria associated with success, but also observe trends.

As there is no such thing as “zero risk”, processes must tolerate faults. Essentially the process should have the attributes of a quality system, where people learn from mistakes and early warnings, the system is audited, and staff skills maintained. Adequate resources must be allocated.

Ethical Foundations of the System of Radiological Protection (*Christopher Clement, Scientific Secretary, International Commission on Radiological Protection (ICRP))*
Radiological protection rests on the three pillars of science, ethical values and experience. Ethics describes how things should be and the moral concepts, but there is an overlap with science. Radiological protection experts and ethicists developed ICRP Publication 138 on *Ethical Foundations of the System of Radiological Protection* (2018). It takes a practical

approach focusing on ethical values and ensuring that the values and principles are understood and accepted around the world and is strongly influenced by biomedical ethics.

The core values are beneficence/non-maleficence (promoting/doing good and avoiding doing harm), prudence (making informed and considered choices, even without full knowledge of consequences), justice (fairness in the distribution of advantages and disadvantages) and dignity (according everyone respect and autonomy). Where there is conflict between the values, a balance should be sought by weighing their relative importance. This may result in disagreement about what is right or good. People who make decisions are accountable for their actions and there should be transparency of information on which decisions are based. Everyone affected by a decision should have the opportunity to participate.

These foundations provide a common language for discussing the ethical basis of radiological protection.

Applications using non-ionizing radiation

Unexplained symptoms in employees of the US Embassy in Havana (*Ken Foster, University of Pennsylvania, USA)*
Prof. Foster gave an overview of the health problems experienced at the US Embassy in Havana and whether they were caused by directed microwave energy, directed acoustic energy or "mass psychogenic illness". There have been several investigations by universities and the CDC, but these suffered from various shortcomings, such as no baseline group for comparison, and broad definitions of what was considered to be an impairment. The National Academies of Sciences, Engineering and Medicine concluded that directed pulsed RF was the most plausible explanation for the symptoms but gave no technical arguments to support this. The "microwave hearing effect" is not a good fit with the observations in Havana, and more powerful pulsed RF sources would require large sources and probably elicit thermal effects. Infrasound is perhaps a more plausible explanation, but none was detected, and the practicality of sources is doubtful. Mass psychogenic illness is also plausible, but hard to prove or disprove. Investigations are hampered by many of the facts being classified.

Safety of Cosmetic Ultrasound (*Jacques Abramowicz, World Federation for Ultrasound in Medicine and Biology (WFUMB))*
WFUMB is a federation of six regional organisations whose mission is to bring ultrasound to underserved areas of the world.

In recent years ultrasound has been promoted for various types of "body-sculpting", such as wrinkle smoothing, treating slack skin, stretch marks etc. Techniques include microfocussed ultrasound (MFU) that uses low intensity ultrasound to treat superficial layers of the skin, and high intensity focused ultrasound (HIFU) that uses higher power to treat depths of 1.1 – 1.8 cm. Despite its lower energy MFU can heat tissue to >60 °C, causing tissue coagulation. Cavitation may also occur.

Undesired effects of MFU, such as mild pain and erythema, bruising and numbness are generally short-lived and disappear after ten days. However, there has been little long-term follow-up. One patient suffered acute eye injury. Adverse effects of HIFU include bruising, swelling, erythema and even second-degree burns. Instructions for the devices recommend

against using them near critical structures such as around the eye.

Until recently there were no regulations, policies or guidelines on cosmetic ultrasound. The SSM in Sweden published a good overview report in 2013. The American Institute of Ultrasound in Medicine published a statement on the safety of cosmetic ultrasound in 2020, that noted the possibility of undesirable side-effects and recommended that MFU and HIFU should only be used by licensed and trained personnel. It also recommended further research.

The FDA has also recognized the risks and classifies cosmetic ultrasound devices as Class II medical devices. The lack of long-term research, and short-term adverse effects, were recognized in a 2020 ICNIRP Statement. The European Union requires devices with medical and non-medical purposes to be considered as medical.

Wednesday 9 June

Session on electromagnetic fields (EMFs)

Opening of the meeting

Emilie van Deventer welcomed participants and introduced a poll to provide an overview of participation, with similar results to the Tuesday 8 June poll.

Update from international organizations on electromagnetic fields activities

WHO (*Emilie van Deventer, World Health Organization)*
Emilie van Deventer gave an overview of the EMF Project and the IAC and noted that this was the Project's 25th anniversary. In the past year there have been financial contributions from Australia, Canada, Ireland, Israel, New Zealand and Switzerland, with in-kind contributions from others (including one day per week of staff time from the Netherlands). Australia has made a significant contribution towards the RF EHC.

There are five collaborating centres (ARPANSA – Australia, BfS – Germany, FOPH – Switzerland, ISS – Italy, PHE – UK). ARPANSA and PHE were redesignated in 2020. Workplans are available on the WHO website.

The current work plan includes providing country support (requested initially through WHO country offices), leadership functions (including the IAC) and "Global Public Health Goods". The latter category includes the framework for NIR protection, the RF EHC document and an updated RF research agenda.

Professor Hajo Zeeb of the University of Bremen, who has been appointed chair of the RF EHC Task Group, gave an update on EHC progress. He reminded participants that while IARC only considers cancer, an EHC considers other health outcomes and looks at hazard identification, exposure and exposure-response assessment, and makes recommendations. Ten systematic reviews have been commissioned, for which protocols will be submitted to Environment International and registered on appropriate databases. To date five protocols have been submitted and three reviewed. In addition to the systematic reviews, this work will result in a

Technical Report that scopes the scientific literature, the EHC Monograph itself, and an RF research agenda. Challenges include the learning curves for multidisciplinary teams, harmonizing the risk-of-bias and GRADE (Grading of Recommendations, Assessment, Development and Evaluations) assessments, and combining evidence streams. Next steps include updating the draft Technical report and setting up the Task Group.

Meeting participants were asked whether they considered that the 2002 publication "Establishing a dialogue on risks from electromagnetic fields" should be updated (either the content, the design, or both). Other international organizations are interested in co-sponsoring this. WHO will send out a survey to gauge interest.

The WHO website is in transition to the new design, and some links have been broken and content removed. Currently there are no country pages, and Emilie would like feedback on the value of this resource. The Global Health Observatory, which includes the EMF Standards database, is also being updated. Emilie reminded participants that the WHO website includes material on 5G and health.

A forthcoming WHO conference on communicating science during health emergencies could be useful in the EMF area.

Finally, Emilie thanked the Collaborating Centres for assistance in developing the agenda.

IARC (*Joachim Schutz, Mary Schubauer-Berigan, International Agency for Research on Cancer)*
Mary Schubauer-Berigan provided an overview of the new IARC Monographs programme approach, and how the streams of evidence are synthesized to form conclusions. The IARC Advisory Group on Priorities 2020-24 noted that new evidence on the effects of RF is available from mechanism and bioassay studies, and further evidence should be available soon from studies such as Mobi-Kids and COSMOS. For these reasons RF is likely to be reevaluated in 2023-24. This would be announced a year in advance.

Joachim Schuz discussed the COSMOS study and its importance. The cohort is now up to about 310,000 individuals. There have already been several publications. Other research needs include understanding any RF dose-response, how exposures change as technology changes and checking whether the cancer data is compatible with time trends.

ITU (*Reyna Ubeda, International Telecommunications Union)*
All ITU branches are involved with some aspects of EMFs. ITU-T has prepared an updated K.Suppl 1 to ITU-T K.91 Guide on EMF and Health, that adds information on 5G. This forms the basis for the ITU mobile phone app. A recent forum on EMF exposures to digital technologies agreed several revised standards, which are freely available.

The ITU-R handbook on RF measurements is being updated. There are ongoing studies to update RF measurements to assess human exposure which will take account of recent exposure Standards from the IEEE and ICNIRP, and 5G base stations. The results will be included in a revision of Report ITU R SM.2452-0.

ITU-D has a new report on strategies and policies regarding exposures to EMFs. New reports on risk assessment will consider whether 5G makes a difference and will be launched in June.

EC DG Research (*Dr Tuomo Karjalainen, European Commission, DG Research)*
Horizon EU is the EU's research and innovation programme. There are several work programmes funding collaborative research on the environment and health. €30M has been allocated to the topic of exposure to EMFs and health. This has been proposed as exposure patterns are changing, and authorities and regulators need good evidence for their work. It will cover exposure monitoring data, information on whether new patterns of exposure are emerging, and whether there is evidence of biological and health effects. The call for projects will be made soon, with a deadline in September 2021.

Review of recent health research activities

Research review of laboratory studies (*Maria Rosaria Scarfi, CNR-IREA, Italy)*
There has been a wide range of ELF studies published, covering a wide range of outcomes. One group compared effects on 2D and 3D cell cultures (which are more representative of the cell environment). Some effects were found in the 3D culture, and 3D cultures were recommended for the future.

There was only one IF paper.

At RF there was also a wide range of studies and outcomes. One that looked at the effects of 94 GHz RF on rat skin found no effects.

Many papers are not informative for health risk assessment due to quality issues. Overall, there is a need to better understand mechanisms and emerging technologies.

Research review of epidemiological studies (*Isabelle Deltour, IARC)*
Isabelle Deltour gave an overview of ELF studies by Baaken and Chen. Baaken et al. had made a systematic review of papers investigating exposures in low- and middle-income countries. There was high heterogeneity in methods, tools and statistics, which mean that the findings cannot be generalised. Standardised protocols in representative samples are needed. Chen et al. investigated motor neurone disease in New Zealand and found no association with occupational exposures to ELF fields, but an association with electric shocks. These differ from findings reported recently by Jalilian et al.

In the RF range, Villeneuve et al. looked at glioma time trends in Canada and concluded that rates have been stable, and do not support the odds ratios reported in the Hardell 2014 and Interphone 2010 studies. However, they are not inconsistent with the Momoli 2017 findings.

Karipidis et al. reviewed 31 epidemiological studies considering exposures to frequencies >6 GHz. Study subjects were mainly military personnel. There was little evidence of health effects.

Member States' recent activities

Briefing on new German Competence Centre on EMF (*Gunde Ziegelberger, Federal Office of Radiation Protection (BfS), Germany)*
A German Competence Centre on EMF was established in 2020 in response to growing

concerns about new power lines and 5G. The intention is to improve health risk assessment and exposure evaluation.

The centre is continuing current projects and adding new ones, including participation in COSMOS and work on 5G risk perception. In addition, the centre is engaging in communication and is available for consultation by local authorities. It is establishing online learning for teachers and general practitioners, in the expectation that this knowledge will be disseminated further in the community. ELF and RF meters are available for hire.

In the near future the Centre will establish a newsletter evaluating new publications, monitor changes in exposure and hold workshops.

French ANSES report on 5G exposure and related health effects (*Olivier Merckel, Agency for Food, Environmental and Occupational Health & Safety (ANSES), France)*
ANSES established an expert group to review the literature on 5G and possible health effects. Their initial report is now open for public consultation.

The report gives an overview of 5G deployment and the accompanying controversies, provides information on exposures and discusses how existing health effects research might be used to cover 5G. Currently most 5G in France is at frequencies from 700 – 2100 MHz: 3.5 GHz is starting to be used but it will be some time before 26 GHz is deployed. The report comments on the decrease in penetration depth at higher frequencies, and the need to distinguish health effects from biological effects.

The report notes difficulties in extending the results of studies at 800-2450 MHz to 3.5 GHz, but considers it unlikely, based on the exposure data, that 3.5 GHz 5G exposures present health risks. At 26 GHz, however, the expert group thinks that there is insufficient data to determine whether or not there are health effects.

New Australian RF standard (*Ken Karipidis, Australian Radiation Protection and Nuclear Safety Agency, Australia)*
ARPANSA published an RF exposure standard in 2002, based on ICNIRP 1998. This is enforced through national telecommunications legislation and workplace health and safety regulations. A replacement standard was developed to respond to the research published since 2002. It adopts the ICNIRP 2020 Guidelines, as these are based on a thorough review of the evidence, were subject to public consultation and contain an extensive rationale. There is no substantiated evidence of health effects at exposures below the new limits.

A summary of differences between the old and new standards is available on the ARPANSA website. Two key points are that the new limits are similar but more precise, and include additional restrictions above 6 GHz to cover potential new applications at these frequencies.

Discussion on WHO future activities
There was a poll on potential topics for webinars. 99% of participants expressed interest in attending webinars. Interest in the topics suggested was:

Topic	Interest
Exposure assessment of 5G technology	80%

EMF and the environment	70%
Updating national EMF Standards: challenges and benefits	65%
How to handle an infodemic in the context of 5G	63%
EMF/NIR applications in medical diagnosis: safety aspects (MRI, ultrasound in children, MRI in post-Covid)	52%
Understanding the systematic review process	43%
Other (to be notified to WHO)	4%

Thursday 10 June

Session on optical radiation

Opening of the meeting

Emilie van Deventer welcomed participants and introduced a poll to provide an overview of participation. This gave results similar to the Tuesday 8 June poll.

Update on international organizations on optical radiation activities

WHO (*Emilie van Deventer, World Health Organization)*
Emile van Deventer gave an overview of the optical radiation programme and where it fits into the WHO "triple billion" goal and the sustainable development goals. The Intersun project was initiated in 1995 with the goal of reducing the global burden of disease due to UV radiation, and works with other agencies such as UNEP, ICNIRP and WMO. This is the tenth anniversary of the annual meetings.

Over the past year funding has come from Norway and Australia. Other countries have made in-kind contributions. As well as international organisations and NGOs, WHO works with seven collaborating centres, four of which were redesignated in the past year. The collaborating centres helped prepare the agenda for this meeting.

The current work plan includes technical support for countries, leadership functions and the provision of global public health goods, such as research agendas, fact sheets and the GHO database on sunbed regulations. A survey will be sent out to solicit input on technical products needed by Member States.

Activities planned with collaborating centres include the development of a UV research agenda, development of a set of health-related messages for a UV Index app and updating WHO communication materials on optical radiation protection in different settings. The Sunprotection List server currently has 290 subscribers in 32 countries. The WHO website, including sections covering UV and the GHO information on sunbed regulations, is currently being updated. The GHO also includes data on the UV burden of disease. The future of UV country pages on the WHO website is uncertain, and participants were invited to send their thoughts on the future of this resource.

WMO (*Stoyka Netcheva, World Meteorological Organization)*
The WMO is currently being reformed to improve its functioning. It has a scientific advisory

group on ozone and UV that considers all factors affecting solar UV and how it is measured. 70 agencies in 50 countries contribute ozone and UV data, which is used for purposes such as UV maps and forecasting.

There is a Memorandum of Understanding between the WMO and WHO to enhance the use of climate and weather data in understanding and protecting against their effects on health. WMO also collaborates with other international agencies and NGOs on projects such as nomenclatures of UV doses, support for a global UV app and reviews of the UV index.

UNEP 2020 EEAP report - Interlinking impacts of climate change and UV radiation *(Janet Bornman, United Nations Environment Programme)*
The UNEP Environmental Effects Assessment Panel (EEAP) assesses effects from changes in the stratospheric ozone layer and ultraviolet radiation, and their interaction with the climate system. It operates through seven integrated working groups, including WG2 on human health.

Model estimates of skin cancers and cataracts avoided due to the Montreal Protocol were provided and photosensitivity from oral medications from UV-B were highlighted.

Selected highlights were mentioned related to biodiversity, aquatic ecosystems, pollution, climate change and unexpected events. Ozone depleting substances (ODSs) were responsible for 33% of warming between 1995 and 2005. Thanks to their withdrawal warming of 0.5 – 1 °C has been avoided. However, warming from other greenhouse gases is expected to release N_20, which is a major ODS. Reduced cloud cover due to climate change is expected to increase UV-B in low and mid latitudes.

UV and climate change can reduce biodiversity and affect plant growth and plant pathogen defences. Forest loss is a concern as more dead plant material is exposed to UV, which accelerates decay and CO_2 production. Increased UV has adverse effects on all stages of fish life cycles. As ice-covered lakes lose their ice, more fish will be exposed. UV is probably an important factor in the breakdown of contaminants in aquatic environments, and many plastics break down to release CO_2. There can also be concentration of heavy metals as micro-plastics oxidise.

Overall, the 2020 EEAP update reinforces the benefits of the Montreal Protocol.

Briefing on lighting

Lighting and public health *(John O'Hagan, Public Health England, United Kingdom)*
Concerns about lighting used to focus on the direct effect of components like UV. Now attention is also being paid to effects on mental health and well-being.

LED lights have created interest in the blue light component. Transmission of blue light to the retina decreases with age. Blue light presents a photochemical hazard at the retina, for which ICNIRP has recommended limits. Incandescent and LED lights have similar blue light intensities, which is less than that from clear sky. There is concern for aphakic children (missing the lens), who have higher sensitivity to blue light.

Light affects the circadian rhythm, and lighting requirements are not the same across the population. There is possibly as link between lighting and myopia.

Temporal light modulation, such as flickering light (e.g. at 100 Hz) may cause health effects, such as headaches and migraines, and some LED lights are deficient at some wavelengths (such as red). These wavelengths may support repair mechanisms in the eyes and skin.

Overall, most lighting is usually safe, but temporal modulation and possibly missing wavelengths should be avoided. Concerns about lighting can cause mental health problems, especially when supported by adverse media reports. Being outdoors periodically, especially in the morning, has many benefits.

Member States' recent activities

A Swiss overview of UV-C disinfection lamps for home use *(Evelyn Stempfel, Federal Office of Public Health, Switzerland)*
There has been promotion of UV-C lamps for disinfection in the home. The FOPH commissioned the Swiss Federal Institute of Metrology (METAS) to measure the UV output from 14 devices intended for home use (mostly hand held) and assigned them to risk groups.

Most of the devices had an open source, and fell into risk group 3 (exposure limit reached in <1,000 seconds) and were classified as high risk. A few posed no risk, and some produced no UV-C. FOPH has published a fact sheet on its website, and recommends not to use the devices at home, but to follow other recommendations on personal protection against pathogens.

A new Canadian UV prediction model *(Philippe Martin, Environment and climate change, Canada)*
The new Canadian UV Index prediction model replaces one developed in 1992, and takes advantage of ozone forecasting and satellite data now available. It is integrated into the numerical weather prediction forecasting system, and provides daily variations over a longer time period than previously. The UV Index is calculated in near real time, and the system generates 10-day forecasts (clear sky and all sky) twice per day.

An hourly UV Index will be available in spring 2022, and in future the UV Index and ozone data will be available through open data sources. The system will also be upgraded to assimilate further ozone observation sets and change to a broadband UV irradiance model that is more consistent with the erythemal action spectrum.

Summary of the 2021 Australian Sun Exposure Summit *(Rachel Neale, QIMR Berghofer Medical Research Institute, Australia)*
The Sun Exposure Summit was held to consider the risks and benefits of sun exposure. Australia has a high incidence of both melanoma and vitamin-D deficiency (both in the north and south of the country). The UV Index varies widely across the country, and it is hard to develop simple public health messages that encompass all these factors.

A position statement on sun exposure was first developed several years ago. Now daily application of sunscreen is recommended if the UV Index is expected to exceed 3.

There is poor community knowledge of how much UV is needed to maintain vitamin-D levels. GPs are also uncertain how to manage the risks and benefits of UV exposure. The summit was convened to check whether the current balance between protection and benefits is correct.

There are various factors to take into account: there is a high burden of disease from UV, a minimum level of vitamin-D must be maintained, many diseases are associated with low levels of vitamin-D but it is not clear whether there is a causal link, and non-UV daylight has important benefits.

Preliminary recommendations are:

- For people with skin types I – III, sunscreen should be applied daily if the UV Index is >3
- Early morning or late afternoon sun is recommended to get the non-UV related benefits of daylight
- Recommendations should recognise diversity and different skin types
- People with a high skin cancer risk should use vitamin-D supplements, but people with a low skin cancer risk will probably get enough UV to maintain vitamin-D levels anyway.
- People should avoid being outside for too long with no sun protection.

Update on the global solar UV app *(Craig Sinclair, Cancer Council Victoria, Australia)*
The global solar UV app is a collaboration between several Australian and global agencies and is now in its final stages before being released. The app focusses on behavioural change to encourage sun protection, and integrates UV and weather forecasts. If sun protection is not needed this will be stated, but with a caveat.

The app gives times when sun protection is needed based on location, provides forecasts for one week and can provide alerts to the user. It works anywhere in the world, pulling down data as needed.

Once launched, WMO will promote the app through meteorological bureaux around the world. It will be available free of charge, initially in English and French but other translations can be added. It can also be adapted (at extra cost) to pick up local live UV feeds.

Europe's Beating Cancer Plan and sunbed issues *(Brigitte Boonen, Euroskin)*
The EU's beating cancer plan states that the European Commission will "explore measures on exposure to ultraviolet radiation, including from sunbeds, which increases the risk of melanoma, the most serious form of skin cancer".

It is known that sunbed use increases the risk of melanoma, especially if used when under 35. Since IARC classified sunbeds as carcinogenic to humans in 2009, there has been a 35% decrease in sunbed prevalence. Research has found that regulating sunbeds changes attitudes and behaviour. If sunbeds were banned this could prevent 800 melanoma deaths per year in Europe.

Sunbed use varies a lot across countries and within populations, and there are many different regulatory regimes. In some countries there is also poor compliance with regulations. The EU Sunbeds Platform made up of 13 countries plus Euroskin and ECL would like to get a uniform regulatory approach. Some countries would like a complete ban. Data is needed on sunbed

numbers, usage and behaviours in order to develop a European plan with harmonised guidelines and communications about the dangers.

Discussion on WHO future priorities

There was a poll on potential topics for webinars. 99% of participants expressed interest in attending webinars. Interest in the topics suggested was:

Topic	Interest
How much UV exposure causes skin damage	74%
Disinfection using UV radiation	69%
Evidence of benefits of sun exposure	58%
Lighting – temporal light artefacts and perception	54%
Regulatory controls of sunbeds	53%
Risks associated with aerosol sunscreens	40%
Other (to be notified to WHO)	8%

From: VAN DEVENTER, Emilie <no-reply@zoom.us>
Sent: 30-05-2022 10:55:47 (UTC +01)
To: Anders Ravnsborg Beierholm <anrb@sis.dk>
Subject: WHO International Advisory Committee (NIR) Confirmation

lello Anders Beierholm,

hank you for registering for WHO International Advisory Committee (NIR). You can find information about this ieeting below.

WHO International Advisory Committee (NIR)

Date & Time	Jun 7, 2022 01:00 PM Amsterdam, Berlin, Rome, Stockholm, Vienna
	Jun 8, 2022 01:00 PM Amsterdam, Berlin, Rome, Stockholm, Vienna
	Jun 9, 2022 01:00 PM Amsterdam, Berlin, Rome, Stockholm, Vienna
Meeting ID	955 6619 9212
Passcode	TgKC$cD9

lease submit any questions to: vandeventere@who.int.

ou can cancel your registration at any time.

VAYS TO JOIN ZOOM

. Join from PC, Mac, iPad, or Android

Join Meeting

the button above does not work, paste this into your browser:

ttps://who.zoom.us/w/95566199212?tk=ooCYPx5Xy1rR4ftNU7b63E0WkHwNCVBuPiT30lzu-M.DQMAAAAWQDB5rBZsVWhOaHlDX1RvR2pIWi1SS3BOT0NnAAAAAAAAAAAAAAAAAAAAAAAAAAAA

'o keep this meeting secure, do not share this link publicly.

dd to Calendar(.ics) | Add to Google Calendar | Add to Yahoo Calendar

. Join by H.323/SIP room system

.323:	162.255.37.11 (US West) 162.255.36.11 (US East) 115.114.131.7 (India Mumbai) 115.114.115.7 (India Hyderabad) 213.19.144.110 (Amsterdam Netherlands) 213.244.140.110 (Germany) 103.122.166.55 (Australia Sydney) 103.122.167.55 (Australia Melbourne) 149.137.40.110 (Singapore) 64.211.144.160 (Brazil) 69.174.57.160 (Canada Toronto) 65.39.152.160 (Canada Vancouver) 207.226.132.110 (Japan Tokyo) 149.137.24.110 (Japan Osaka)
leeting ID:	955 6619 9212
asscode:	02275033
IP:	95566199212@zoomcrc.com
asscode:	02275033

hank you!

From: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Sent: 16-02-2022 10:34:06 (UTC +01)
Cc: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Subject: SAVE-THE-DATE: WHO IAC meeting on non-ionizing radiation - 7-9 June 2022

****** WHO International Advisory Committee (IAC) on Non-Ionizing Radiation and Health (EMF and Optical Radiation) ******

Dear IAC representatives,

Thanks for replying to the poll to schedule the upcoming 2022 IAC meeting. Based on your collective availability, the meeting will be held online on **7-9 June 2022.**
To account for the time difference between countries, we are scheduling the three sessions **from 13:00 to 14:30 (CET)**:

- Tuesday 7 June: Topics of general interest on non-ionizing radiation (NIR)
- Wednesday 8 June: Topics related to electromagnetic fields
- Thursday 9 June: Topics related to optical radiation

For those who have not done so, please share with us any specific topics that you would like to be presented/discussed during the meetings.
Further information regarding registration and agenda will be send in due course.

Kind regards,
Emilie

Dr Emilie van Deventer
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Division of Universal Health Coverage/Healthier Populations
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World Health Organization

From: VAN DEVENTER, Tahera Emilie
Sent: Wednesday, February 2, 2022 9:51 PM
Cc: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Subject: WHO IAC meeting on NIR - June 2022

****** WHO International Advisory Committee (IAC) on Non-Ionizing Radiation and Health (EMF and Optical Radiation) ******

Dear IAC representatives,

I hope this email finds you well and healthy.

Given the current situation which does not yet enable to plan for a physical meeting, I suggest that we hold the 2022 annual WHO IAC meeting in a similar way as last year, i.e. through a set of online sessions. To strive for geographical inclusion and account for time difference between countries, the sessions would start at 13:00 (CET) and last for 1 to 1.5 hour.

We propose three sessions on consecutive days during the month of June 2022:

- Topics of general NIR interest (Tuesday)
- Topics related to electromagnetic fields (Wednesday)
- Topics related to optical radiation (Thursday)

To decide on the meeting week, please provide your availability by Tuesday 15 February at the following poll: https://doodle.com/poll/8p3b4tt4dn7z4y77?utm_source=poll&utm_medium=link

Also, please let us know if there are specific topics that you would like to be presented/discussed during the meetings.

Looking forward to hearing back from you.

Kind regards,
Emilie

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Follow WHO on Facebook | Twitter | YouTube | Instagram


We Are #InThisTogether against COVID-19
www.who.int/COVID-19
World Health Organization
Staying safe protects you, protects others

From: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Sent: 02-02-2022 21:51:23 (UTC +01)
Cc: VAN DEVENTER, Tahera Emilie <vandeventere@who.int>
Subject: WHO IAC meeting on NIR - June 2022

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Looking forward to hearing back from you.

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Emilie

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Staying safe protects you, protects others