

ICNIRP ACTIVITIES

REPORT 2020

Introduction

This report summarizes the activities of the Commission for the period between 1st January 2020 and 31st December 2020.

ICNIRP Scientific Secretariat

The Scientific Secretariat is based in Oberschleissheim, Germany. It keeps the records of the Commission, overviews the work program, provides administrative support, responds to scientific and other requests, prepares and organizes workshops both scientifically and logistically, coordinates the activities of the Commission including communication and partner contacts, liaises with publishers, maintains and updates the website and manages its finances.

At the 2019 Annual General Meeting (AGM), the ICNIRP Scientific Secretary, Dr Gunde Ziegelberger, was re-elected for the term of office 2020-2024.

Declaration of personal interests

The declarations of personal interests are completed by all Commission and SEG members on a yearly basis. The declarations of personal interests are screened and evaluated by the Board and Commission with the objective of safeguarding ICNIRP's scientific independence. All declarations of personal interests are available on the ICNIRP website at www.icnirp.org.

Commission meetings

Because of the pandemic situation all Commission and Project Group meetings had to be staged online. The Commission meetings took place on 7-8 May and 22 June. The May meeting was dedicated to ongoing business. At the end of that meeting the new term of the Commission started and its composition changed. In the June meeting the new work plan was discussed. At the AGM on 17-18 November the main topic was the establishment of several new Project Groups and the selection of the Scientific Experts following the screening of all Declaration of Personal Interests. The AGM agenda included further administrative matters required by the statutes, in particular the approval of the budget.

Work plan activities until 2020

Statement on Protection Principles

The ICNIRP Statement "Principles for Non-Ionizing Radiation Protection" prepared in collaboration with the International Radiation Protection Association (IRPA), the International Committee on Radiation Protection (ICRP), the International Labour Organization (ILO), and the World Health Organization (WHO) was accepted for publication at Health Physics in 2019 and published in May 2020. The [ICNIRP Statement - Principles for Non-Ionizing Radiation Protection. Health Physics 118\(5\):477-482; 2020](#) is available on the ICNIRP website.

Guidelines for limiting exposure to electromagnetic fields (100 kHz -300 GHz)

The Guidelines for limiting exposure to electromagnetic fields (100 kHz – 300 GHz) were developed by the Project Group and the Commission. A draft was available online during 90 days in 2018 for public consultation. More than 90 participants provided altogether more than 1200 individual comments. The further document finalized by the Commission was accepted for publication at Health Physics in September 2019 and published in March 2020 (pre-print) and as final publication in [Health Phys 118\(5\):483-524; 2020](#). It is available on the ICNIRP website. Accompanying this publication, ICNIRP developed [additional material](#) to explain the guidelines and put them into context ([video presentation](#), RF EMF [FAQ](#), [note explaining the difference between the ICNIRP 1998 and the ICNIRP 2020 guidelines](#), and a [FAQ on 5G](#)). All this material is available on the [ICNIRP website](#).

Statements on Data Gaps

A Project Group on "Data gaps identified during guidelines' development" was set up under the leadership of Dr Carmela Marino to draft a research agenda for the whole NIR spectrum, based in particular on the gaps identified during guidelines development. The ICNIRP research agenda aims at identifying knowledge gaps relevant for giving protection guidance. The ICNIRP Statement on Gaps in Knowledge Relevant to the "Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields (1 Hz - 100 kHz) 2010" was finalized by the Commission and published in Health Physics in May 2020 ([Health Physics 118\(5\):533-542; 2020](#)). It is also available on the [ICNIRP website](#). The Project Group has now started to develop a similar document on RF Data Gaps.

NIR Exposure for Cosmetic Purposes

Within the Work Plan 2016-2020, a Project Group on "Intended human exposure to NIR for cosmetic purposes" was established to draft a statement. This Project Group under the leadership of Dr Ken Karipidis has finalized its statement, which was published in Health Physics in May 2020 ([Health Physics 118\(5\):562-579; 2020](#)) and is available on the [ICNIRP website](#).

Health Implications of LEDs

The Project Group formed under the leadership of Dr Sharon Miller completed its revision of the ICNIRP Statement on Light-Emitting Diodes and Laser Diodes: Implications for Hazard Assessment (Health Phys 78(6):744-752; 2000). The new statement is limited to LEDs. It was published in Health Physics in May 2020 ([Health Physics 118\(5\):549-561; 2020](#)) and is available on the [ICNIRP website](#).

Comments on the 2013 Laser Guidelines

The Project Group formed under the leadership of Dr Tsutomu Okuno completed its ICNIRP Statement - Comments on the ICNIRP Laser Guidelines. Health Physics 118(5):543-548; 2020. The Statement was published in Health Physics in May 2020 ([Health Physics 118\(5\):543-548; 2020](#)) and is available on the [ICNIRP website](#).

Work plan activities 2020-2024

RF Dosimetry Review

The Project Group "RF dosimetry review" under the leadership of Dr Akimasa Hirata is in charge of RF dosimetry aspects as relevant to the RF guidelines and the WHO RF EHC monograph. A final document was delivered to WHO in December 2020.

Revision of the Statement on Laser Pointers

The Project Group on "Laser Pointers" under the leadership of Dr Tsutomu Okuno is in charge of the revision of the ICNIRP Statement on Laser Pointers (Health Phys 77(2):218-220:1990). A final document is expected in 2021.

Short Wavelength light and Circadian Rhythm

The Project Group on "Short Wavelength Light" under the leadership of Dr Sharon Miller is developing a statement on the effects of short wavelength light on circadian rhythm. It is expected to be finalized in 2021.

New items

Effects of NIR on the environment

Under the leadership of Dr Eric van Rongen, a Project Group will undertake a statement on the effects of NIR on the environment (plants and animals in their natural environment). An ICNIRP publication on the subject *Proceedings of an ICNIRP workshop on the effects of EMF on the living environment* dates back to 2000. Recently, in November 2019, the German Federal Office (BfS) organized a similar workshop that showed in general still a lack of adequate information. The goal of this Project Group will be, using the report of this workshop as its starting point, to draft a statement on environmental effects of EMF and, if possible, to analyse whether the current human exposure guidelines are sufficiently protective for plants and animals in their natural environment.

RF Knowledge Gaps

Under the leadership of Dr Carmela Marino the Project Group will continue taking a look at knowledge gaps as relevant to protection guidance. Currently, the Project Group is in charge of drafting a research agenda on knowledge gaps identified during the development of the RF guidelines.

Revision of the Laser Guidelines

In light of the 2020 ICNIRP Comments on the Laser Guidelines and recent data, a Project Group under the leadership of Dr Tsutomu Okuno is in charge of revising the 2013 ICNIRP Laser guidelines (Health Phys 105(3): 271-295: 2013). A fact sheet summarizing the changes is also expected.

Revision of the LF Guidelines (≤ 10 MHz)

A Project Group under the leadership of Dr Rodney Croft will develop an updated set of low frequency guidelines, combining, and relative to that of ICNIRP 2009 (static magnetic fields), ICNIRP 2010 (low frequency fields) and ICNIRP 2014 (induced electric fields). Where appropriate, the underlying logic of the 2020 RF guidelines will be used. The output of this Project Group 'may' subsequently be combined with the 2020 RF guidelines to form a single set of guidelines (up to 300

GHz). Note that this Project Group will not review the dosimetry literature, as that is covered by a separate Project Group (low frequency dosimetry).

LF Dosimetry Review

A systematic review on LF dosimetry and related physics will be prepared by a Project Group lead by Dr Akimasa Hirata. This will provide the dosimetry basis for the revision of the LF Guidelines.

Exposure to Ultrasound

Protection of patients from exposure to ultrasound for medical purposes is controlled through international standards and national regulations. ICNIRP has published recent statements on the use of ultrasound for diagnostic (Health Phys 112(3):305–321; 2017) and cosmetic (Health Phys 118(5):562–579; 2020) purposes. Protection against airborne ultrasound has not been evaluated for a while, and interim guidelines on human exposure were published by the International Radiation Protection Association in 1984. A Project Group under the leadership of Dr Ken Karipidis is to investigate whether the available data on ultrasound exposure require the development of exposure guidelines or a general statement on safety, and to prepare a recommendation for the development of either guidelines or a statement for consideration by the ICNIRP Commission.

Long-Term Effects of Chronic UV Exposure:

A Project Group, led by Dr Nigel Cridland, is to review existing evidence in relation to long-term effects on the eye and the skin for which chronic exposure to UV may be a contributory factor. These will include effects on the cornea/conjunctiva (pterygium, pingueculae and climatic droplet keratopathy), the lens (cataract), the retina (macular degeneration) and the skin (photoageing and cancer). For ocular effects, the Project Group will consider whether the evidence is sufficient to enable advice on restricting exposure to be formulated and whether this would be substantively different from existing advice on the avoidance of adverse effects from acute exposure. For effects on the skin, which is already considered in the existing guidelines, the project group will consider whether advances in knowledge over the last 15 years are sufficient to justify any change to the guidelines.

Validity of Relative Spectral Effectiveness Factor at Short Wavelengths

Related to the above Long-Term Effects of Chronic UV Exposure task, a further Project Group is in charge of considering the validity of the relative spectral effectiveness factor at short wavelengths. The Project Group led by Dr Nigel Cridland will examine the evidence and, if appropriate, make recommendations for revised values.

Publications

[ICNIRP Guideline for Limiting Exposure to Electromagnetic Fields \(100kHz – 300GHz\). Health Phys 118\(5\):483-524; 2020](#)

[ICNIRP Statement - Principles for Non-Ionizing Radiation Protection. Health Physics 118\(5\):477-482; 2020](#)

[ICNIRP Statement on Gaps in Knowledge Relevant to the "Guidelines for Limiting Exposure to Time-Varying Electric and Magnetic Fields \(1 Hz - 100 kHz\) 2010". Health Physics 118\(5\):533-542; 2020](#)

[ICNIRP Statement on Intended Human Exposure to Non-Ionizing Radiation for Cosmetic Purposes. Health Phys 118\(5\):562-579; 2020](#)

[ICNIRP Statement on Light-Emitting Diodes \(LEDs\): Implications for Safety. Health Physics 118 \(5\): 549-561; 2020](#)

[ICNIRP Statement - Comments on the 2013 ICNIRP Laser Guidelines. Health Physics 118\(5\):543-548; 2020](#)

Website Publications

[FAQs - Frequently Asked Questions on the ICNIRP Guidelines for Limiting Exposure to Electromagnetic Fields \(100 kHz - 300 GHz\)](#)

[Differences between the ICNIRP \(2020\) and previous guidelines](#)

[Website Information on 5G RF EMF](#)

Workshops and Meetings organized by ICNIRP or with ICNIRP participation

As a widely recognized international organization in non-ionizing radiation protection, ICNIRP is invited to participate in, or co-sponsor, many international scientific events. In the period covered by this report, ICNIRP has organized and/or contributed to the following meetings:

ICNIRP Main Commission, PG and Board meetings

- | | | |
|---------------------------------|--------|----------------|
| • ICNIRP Commission Meeting | Online | 7-8 May |
| • ICNIRP Commission Meeting | Online | 22 June |
| • ICNIRP PG LF Guidelines | Online | 24 September |
| • ICNIRP Annual General Meeting | Online | 17-18 November |
| • ICNIRP PG Communication | Online | 9 December |

Participation of ICNIRP representatives in Workshops, Scientific Meetings and Courses

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|--|-------------------|---------------|
| • ICNIRP and EC DG EMPL | Brussels, Belgium | 8 January |
| • European 5G Conference 2020 | Brussels, Belgium | 29-30 January |
| • IIC Webinar on "5G & health misinformation amid COVID-19: the facts and how to communicate them" | Online | 27 May |
| • WHO International Advisory Committee meeting on Non-Ionizing Radiation | Online | 29 June |
| • ITU Regional Symposium | Online | 1-2 July |
| • UCC webinar on communication safety | Online | 11 August |
| • International CIE/ICNIRP Tutorial on Optical Measurements | Online | 25-26 August |
| • European GSMA EMF Forum | Online | 14 October |
| • ITU Regional Symposium on 5G | Online | 22-23 October |

• Telecom Paris Webinar on 5G	Online	3 November
• International GLORE Meeting	Online	9 November
• KEBS Webinar on NIR Application	Online	24 November
• CRASA Forum Demystifying 5G Deployment & EMF vs Public Health	Online	4 Dezember
• European Parliament STOA Workshop: Health and Environmental Impacts of 5G	Online	7 December

Collaboration with International Organizations

World Health Organization (WHO)

ICNIRP is officially recognized by the World Health Organization as a collaborative NGO for all aspects of non-ionizing radiation protection within the Framework of Engagement with Non State Actors (FENSA). The collaboration is mainly related to WHO's International EMF project, and INTERSUN Program.

WHO contributed through its DTO Radiation Program, Dr Emilie van Deventer, by providing input to the development of statements such as the statement on cosmetic devices and on radiation protection principles published in 2020. Within the cooperation, ICNIRP provided technical input supporting the development of guidance on protection from NIR exposure. Finally, WHO together with ILO and IRPA, were invited to participate in the special session of the International NIR Workshop expected in May 2020 in Seoul, Korea to present their particular roles in NIR protection. Due to the pandemic this situation, however this activity had to be cancelled.

European Commission (EC)

ICNIRP advances radiation protection science throughout Europe and the World in particular through the support provided by the European Union Programme for Employment and Social Innovation ("EaSI") 2014-2020. ICNIRP provides, upon request, scientific advice for the evaluation and interpretation of scientific data, and for their dissemination, especially to the Directorate General "Employment, Social Affairs and Inclusion". This year ICNIRP provided information on the 2020 RF Guidelines to the European institutions at meetings organized by the European Commission DG Employment and the Science and Technology Options Assessment of the European Parliament.

International Labour Organization (ILO)

The partnership between ICNIRP and ILO dates back to 1994 when ICNIRP was admitted on the ILO's Special List of Non-Governmental Organizations. Since then several publications have been jointly issued, particularly in relation to EMF and Ultraviolet radiation. The past year's collaboration was related to the discussions led at the international level on a system of radiation protection relevant to ionizing and non-ionizing radiation protection, which resulted in 2020 in the publication in Health Physics of the ICNIRP Statement on Protection Principles (Health Physics 118(5):477-482; 2020).

International Radiation Protection Association (IRPA)

ICNIRP and IRPA are linked per Charter and their cooperation is within this framework. IRPA provides information on ICNIRP activities regarding its publications, current online consultation, the organization of conferences, and the elections on its website. IRPA is invited to provide comments on the ICNIRP guidelines drafts and to provide nominations at ICNIRP Commission elections.

In 2020, the ICNIRP statement on protection principles, which was reviewed by IRPA delegates, was published (Health Physics 118(5):477-482; 2020). The ICNIRP contribution to the IRPA Congress planned in May 2020 had to be postponed to 2021 due to the pandemic situation.

Other collaboration

As part of its mission, ICNIRP provides scientific advice on NIR protection in many countries worldwide (see above list of meetings and conferences). These activities are performed mostly through participation in seminars or round tables and the provision of lectures in training courses and scientific conferences, as well as meetings with protection agencies.

Budget and Governance

ICNIRP funding stems from public and governmental agencies only. In 2019 the ICNIRP activities were supported by the German Federal Ministry for the Environment (BMUB), the European Union Programme for Employment and Social Innovation ("EaSI") 2014-2020, and the International Radiation Protection Association (IRPA). In addition, the Ministry of Health of New Zealand (NZ MoH) and the Australian Radiation Protection and Nuclear Safety Authority (ARPANSA) also provided a general subsidy. The flight and staying expenses of a few ICNIRP and SEG members were covered by their national radiation-related bodies.

ICNIRP's annual financial reports are screened for tax purposes every three years. The below tables are indicative.

Financial Report 2019* - Amounts in Euro		
Income		
Subsidies		99.836,43
Workshops and Books		840,04
Total Income		100.676,47
Expense		
Staff & Training	- 90.342,63	
Meetings & Workshops	- 47.126,98	
Publications & Communication	- 3.056,31	
Insurance & Administrative Expense	- 1.376,53	
Total Expense	- 141.902,45	
Finance Income		0,00
Finance Costs	- 264,79	
Financial results	- 264,79	
Result of the Year	- 41.490,77	

Financial Report 2020* - Amounts in Euro		
Income		
Subsidies		173.514,02
Workshops and Books		923,55
Total Income		174.437,57
Expense		
Staff & Training	- 95.914,39	
Meetings & Workshops	- 1.452,69	
Publications & Communication	- 20.176,58	
Insurance & Administrative Expense	- 5.153,77	
Total Expense	- 122.697,43	
Finance Income		0,00
Finance Costs	- 335,20	
Financial results	- 335,20	
Result of the Year	51.404,94	

* The above tables are indicative. Subsidy payments and expenses related to an activity period may be reported in the next period.