Dear Contributor,

Thank you for participating in the public consultation of the ICNIRP draft guidelines.

Please note that it is important that ICNIRP understands exactly the points that you are making. To facilitate our task and avoid misunderstandings, please:

* be concise
* be precise
* provide supporting evidence (reference to publication, etc.) if available and helpful.

**How to complete the comments table:**

Please use 1 row per comment. If required, please add extra rows to the table.

This response document asks you to provide your ‘comment’, your ‘proposed change’, and the ‘context’ to this comment and proposed change. What is meant by these is the following:

**Comment :** A brief statement describing the issue that you have identified (and that you would like ICNIRP to take into account in the final version of the guidelines).

**Proposed Change:** A brief statement describing how you would like the document changed to account for this issue.

**Context:** A brief statement identifying relevant documents in support of your comment and proposed change.

**Please, provide your details below as per the online form and the provision of the privacy policy**

|  |  |  |
| --- | --- | --- |
| Last name, first name: STAM, Rianne | Email address: Your email address. | Affiliation (if relevant): National Institute for Public Health and the Environment, the Netherlands |
| If you are providing these comments officially **on behalf** of an organization/company, please name this here: organization/company | | |
| I hereby agree that, for the purpose of transparency, **my identity (last and first names, affiliation and organization where relevant) will be displayed** on the ICNIRP website after the consultation phase along with my comments.  I want my comments to be displayed anonymously. | | |

|  | **Document**  **(Guidelines, App A,**  **App B)** | **Line Number**  **#** | **Type of comment (General/ Technical/ Editorial)** | **Comment. Proposed change. Context.** |
| --- | --- | --- | --- | --- |
| **1** | Guidelines | 45-49 | General | Insufficient information is given on the search methodology and criteria for determining if publications were of 'sufficient scientific quality'  Please provide more information on the search methodology and criteria for determining if publications were of 'sufficient scientific quality' (either here or in appendix B). If the literature basis before 2014 was exclusively from the draft WHO review (which was incomplete and is no longer available on the WHO website) and SCENIHR (2015), please provide search criteria, quality criteria and results for the supplementary search after these two reviews, if necessary in supplementary materials (for example on the ICNIRP website). It would also be useful if a complete list of all literature references that were used in the assessment (including those from the WHO and SCENIHR reviews) were to be made available online.  Since the selective and non-systematic use of scientific publications is a criticism that is often levelled against advocacy groups, it is vital that ICNIRP distinguishes itself from such groups by full disclosure of the objectivity and completeness of its scientific literature review process. |
| **2** | Guidelines | 78-80 | Technical | The definition of the reference level differs from that in the 1998 ICNIRP guidelines ("Compliance with the reference level will ensure compliance with the relevant basic restriction") and implies a greater level of uncertainty. This is only explained further in section 5.2  Please add a sentence explaining that readers can find the motivation in that section.  Explain the context of your comment. |
| **3** | Guidelines | 114 | Editorial | "watts", "joules per second"  "watt", "joule per second"  SI definition: https://www.bipm.org/en/publications/si-brochure/section2-2.html |
| **4** | Guidelines | 116 | Editorial | "radiofrequency EMF reaches"  "a radiofrequency EMF reaches"  Explain the context of your comment. |
| **5** | Guidelines | 120 | Editorial | "volts per meter"  "volt per meter"  SI definition: https://www.bipm.org/en/publications/si-brochure/section2-2.html |
| **6** | Guidelines | 129 | Editorial | "dialectric"  "dielectric"  Explain the context of your comment. |
| **7** | Guidelines | 138 | Technical | "transmitted power density"  "absorbed power density"  Although technically correct, the term "transmitted power density" is confusing for broader audiences because it seems to refer to the power density at the EMF source (transmitter), rather than in the skin of the exposed individual. Replacing it by "absorbed power density" everywhere in the guidelines and appendix A would remove this confusion. |

Add further rows if needed. For this copy the above row.

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| **8** | Guidelines | 151 | Editorial | "electric field", "magnetic field"  "electric field strength", "magnetic field strength"  Explain the context of your comment. |
| **9** | Guidelines | 153 | Editorial | "watts per square meter"  "watt per square meter"  SI definition: https://www.bipm.org/en/publications/si-brochure/section2-2.html |
| **10** | Guidelines | 199 | Editorial | "protected"  "protected against"  Explain the context of your comment. |
| **11** | Guidelines | 256 | Editorial | "accident"  "damage"  Explain the context of your comment. |
| **12** | Guidelines | 260, 267, 437 | Editorial | "ACGIH 2017"  specify "ACGIH 2018a" and/or "2018b"  There is no reference listed for ACGIH 2017. |
| **13** | Guidelines | 572 | Editorial | "denaturation of tissue"  "denaturation of proteins"  Explain the context of your comment. |
| **14** | Guidelines | 596,605 | Editorial | "square"  delete  tautology |
| **15** | Guidelines | 681 | Technical | Table 4  Add extra column with reference levels in terms of the magnetic flux density (B-field)  User flexibility and continuity with 1998 ICNIRP guidelines and recommendation 1999/519/EC of the Council of the European Union. |
| **16** | Guidelines | 719 | Technical | Table 5: footnote 3  Please check if reference to Table 6 is correct and if so, explain how a reference level for Hinc can be used in a column that lists Sinc  If footnote 3 is correct, is is not clear why or how a reference level for energy density should be applied in a table listing reference levels for power density. Is it possible that the authors wanted to refer to Table 4 instead? In that case there would be a discontinuity in the value of Sinc at 6 GHz (from 50 to 200 W/kg). |
| **17** | Guidelines | 719 | Editorial | Table 6: "≤ 6 min"  "< 6 min"  By analogy with Table 3. |
| **18** | Guidelines | 720 | Editorial | "2.5+1.77"  "[2.5+1.77" |
| **19** | Guidelines | 727 | Type of comment | "Peak spatial Hinc"  "Spatial maximum Hinc"  This concerns unperturbed rms values (rather than peak values) in the table, change makes this clearer. |
| **20** | Guidelines | 733 | Type of comment | "spatial peaks"  "spatial maxima"  This concerns unperturbed rms values (rather than peak values) in the table, change makes this clearer. |
| **21** | Guidelines | 740 | Technical | Table 7: "Frequency range 100 kHz to 110 MHz"  "Frequency range 10 to 110 MHz"  Appendix A (line 787) claims this is the same as in ICNIRP 1998, but the frequency range in Table 9 of ICNIRP 1998 is 10 to 110 MHz. |
| **22** | Guidelines | 849 | Technical | Equation 6: "110 MHz i=100kHz"  "110 MHz i=10 MHz  Appendix A (line 787) claims this is the same as in ICNIRP 1998, but the frequency range in Table 9 of ICNIRP 1998 is 10 to 110 MHz. |
| **23** | Appendix A | 18 | Editorial | "levels are due"  "levels that are due"  Explain the context of your comment. |
| **24** | Appendix A | 31-32 | Editorial | "adverse health effects caused by the lowest radiofrequency exposure levels"  "lowest radiofrequency exposure levels that cause adverse health effects "  Explain the context of your comment. |
| **25** | Appendix A | 42 | Editorial | "watts"  "watt"  SI definition: https://www.bipm.org/en/publications/si-brochure/section2-2.html |
| **26** | Appendix A | 166-170 | Technical | This line of reasoning is not clear. Why would experimental data indicating at least 60 minutes to reach a body temperature rise of 1˚C for whole body SAR of 6 to 8 W/kg logically lead to the selection of a 30-minute averaging time to reach the steady state temperature ?  Please explain choice of 30-minute averaging time.  Explain the context of your comment. |
| **27** | Appendix A | 250 | Editorial | "occupation"  "occupational"  Explain the context of your comment. |
| **28** | Appendix A | 369 | Editorial | Table 3: decimal point given where no decimals are given  Delete decimal points where no decimals are given  Explain the context of your comment. |
| **29** | Appendix A | 540 | Editorial | "being within"  "exposure below"  Explain the context of your comment. |
| **30** | Appendix A | 596-597 | Editorial | "in the low frequency guidelines"  delete  duplication |
| **31** | Appendix A | 753-754 | Editorial | "and the ratio of the high conductivity tissues is small in the ankle and wrist"  "and the ratio of the high conductivity tissues to the low conductivity tissues is small in the ankle and wrist"  Ratio has to have a denominator, presumably this is what ICNIRP meant. |
| **32** | Appendix A | 771 | Technical | "100 mA and 20 mA"  "100 mA and 45 mA"  By analogy with Table 7 (line 740) of the draft guidelines and the ICNIRP 1998 guidelines. Alternative would be to change Table 7 and motivate the choice for 20 mA. |
| **33** | Appendix A | 787 | Technical | "100 kHz to 110 MHz"  "10 MHz to 110 MHz"  By analogy with ICNIRP 1998, Table 9. If there are sound scientific reasons to change the lower limit from 10 MHz to 100 kHz, these should be explained. See also my remarks under comments 21 and 22. |
| **34** | Appendix A | 803-805 | Technical | "It is noted that the time function of the reference levels and the transmitted energy density basic restrictions are more conservative than those for the SA reference levels and basic restrictions. This means that the reference levels are more conservative above than below 6 GHz."  "It is noted that the time function of the transmitted energy density basic restrictions and corresponding reference levels for Hinc above 6 GHz are more conservative than those for the SA basic restrictions and corresponding reference levels for Hinc below 6 GHz."  This line of reasoning is not clear and the sentence should be reformulated. Presumaby this what the authors meant to say? |
| **35** | Appendix B | 15-27 | General | Insufficient information is given on the search methodology and criteria for determining if publications were of 'sufficient scientific quality'  Please provide more information on the search methodology and criteria for determining if publications were of 'sufficient scientific quality'. If the literature basis before 2014 was exclusively from the draft WHO review (which was incomplete and is no longer available on the WHO website) and SCENIHR (2015), please provide search criteria, quality criteria and results for the supplementary search after these two reviews, if necessary in supplementary materials (for example on the ICNIRP website). It would also be useful if a complete list of all literature references that were used in the assessment (including those from the WHO and SCENIHR reviews) were to be made available online.  Since the selective and non-systematic use of scientific publications is a criticism that is often levelled against advocacy groups, it is vital that ICNIRP distinguishes itself from such groups by full disclosure of the objectivity and completeness of its scientific literature review process. |
| **36** | Appendix B | 27-29 | Technical | What was the objective basis for the selection of "a limited number of examples?  Add explanation of selection of examples and provide link to full literature list (see comment 35).  Explain the context of your comment. |
| **37** | Appendix B | 30 | General | Since the following sections in Appendix B provide only general summarising remarks without adequate referencing, it is impossible to give meaningful scientific feedback. The following comments only concern textual corrections.  Insert your proposed change.  Explain the context of your comment. |
| **38** | Appendix B | 202 | Editorial | "within"  "below"  Explain the context of your comment. |
| **39** | Appendix B | 214 | Editorial | "epinephrine and norepinephrine"  "adrenaline and noradrenaline"  Although "epinephrine and norepinephrine" are international non-proprietary names, the use of "adrenalin and noradrenalin" is more widespread (e.g. European Pharmacopoeia) and less likely to lead to confusion (e.g. adrenergic receptors). [Aronson JK (2000), BMJ 320:506-509]. |
| Continue numbering | Document ? | Line number | Type of comment | Insert your comment.  Insert your proposed change.  Explain the context of your comment. |