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**

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| --- | --- | --- |
| Last name, first name: Frese, Georg | Email address: Your email address. | Affiliation (if relevant): Convenor of IEC [TC 62/SC 62B/MT 40](https://www.iec.ch/dyn/www/f?p=103:14:0::::FSP_ORG_ID,FSP_LANG_ID:2495,25) |
| If you are providing these comments officially **on behalf** of an organization/company, please name this here: IEC [TC 62/SC 62B/MT 40](https://www.iec.ch/dyn/www/f?p=103:14:0::::FSP_ORG_ID,FSP_LANG_ID:2495,25)  |
| [x]  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 | 95-96, 354 | Technical | It is appreciated that the fetus requires significant thermal protection. Where ICNIRP suggests that a temperature increase of 2 °C is acceptable from the perspective of the Basic Restrictions, this statement could be made more explicit, e.g. in Appendix B. We bring to ICNIRP’s attention resulting from pregnant woman simulations that for 2 W/kg WB SAR mean fetal temp never exceed 38 deg (dT <=0.5deg)- even after 60 min exposure at SAR limits. Local temperatures are more difficult to estimate when the fetus can freely reorient, but even under those circumstances, dT > 2 °C are not reported.Under these circumstances, we suggest that using the phrase that the fetus shall be considered as member of the general public “regardless of exposure scenario” should be softened, and that at least a clarification is made that medical exposure of the mother can be safely and ethically justifiable implemented.Supporting literature:Murbach, M et al.Pregnant women models analyzed for RF exposure and temperature increase in 3T RF shimmed birdcages.Magn Reson Med. 2017 05;77(5):2048-2056 doi:10.1002/mrm.26268Hirata, A et al.Computation of temperature elevation in fetus due to radio-frequency exposure with a new thermal modeling.Conf Proc IEEE Eng Med Biol Soc. 2013 ;2013:3753-6 doi:10.1109/EMBC.2013.6610360Hirata, A et al.Computation of Temperature Elevation in a Fetus Exposed to Ambient Heat and Radio Frequency FieldsNumerical Heat Transfer, Part A: Applications, 2014, 65:12, 1176-1186,DOI: 10.1080/10407782.2013.869075Gowland, PA et al.Temperature increase in the fetus due to radio frequency exposure during magnetic resonance scanning.Phys Med Biol. 2008 Nov;53(21):L15-8 doi:10.1088/0031-9155/53/21/L01Hand, JW et al.Numerical study of RF exposure and the resulting temperature rise in the foetus during a magnetic resonance procedurePhys. Med. Biol. 55 (2010) 913–930 doi:10.1088/0031-9155/55/4/001 |
| **2** | Document ? | Line number | Type of comment | Insert your comment.Insert your proposed change.Explain the context of your comment. |
| **3** | Document ? | Line number | Type of comment  | Insert your comment.Insert your proposed change.Explain the context of your comment. |
| **4** | Document ? | Line number | Type of comment  | Insert your comment.Insert your proposed change.Explain the context of your comment. |
| **5** | Document ? | Line number | Type of comment  | Insert your comment.Insert your proposed change.Explain the context of your comment. |
| **6** | Document ? | Line number | Type of comment  | Insert your comment.Insert your proposed change.Explain the context of your comment. |
| Continue numbering | Document ? | Line number | Type of comment  | Insert your comment.Insert your proposed change.Explain the context of your comment. |

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

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