January 7, 2020

Mrs. Simonetta Sommaruga, President of the Swiss Confederation

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BAKOM & Sektion NIS, BERENIS, COMCOM, METAS, BAFU, BAG

Dear Mrs. Sommaruga,

I am writing you as the key individual in charge and accountable over the following concerns:

Expert evaluations on health risks from radiofrequency electromagnetic fields (RF-EMF) and 5G need to be performed by experts with no conflicts of interests

Regarding two important government expert groups in Switzerland, several Swiss citizens have brought it to our attention that Associate Professor Martin Röösli is the chair (Director) of BERENIS, and of the subgroup 3 evaluating RF-radiation health risks from 5G technology, despite conflicts of interest, and history of misrepresentation of science.

 BERENIS - Swiss advisory expert group on electromagnetic fields and non-ionising radiation

https://www.bafu.admin.ch/bafu/fr/home/themes/electrosmog/newsletter-du-groupe-consultatif-dexperts-en-matiere-de-rni--ber.html

https://www.bafu.admin.ch/bafu/en/home/topics/electrosmog/newsletter-of-the-swiss-expert-group-on-electromagnetic-fields-a/beratende-expertengruppe-nis-berenis.html

 Mobile Communications and Radiation Working Group of DETEC/UVEK, evaluating RF-radiation health risks from 5G technology

 $\underline{https://www.bafu.admin.ch/bafu/fr/home/themes/electrosmog/dossiers/rapport-groupe-detravail-telephonie-mobile-et-rayonnement.html}$

https://www.uvek.admin.ch/uvek/fr/home/detec/medias/communiques-de-presse.msg-id-77294.html

BIASED CONCLUSIONS

The conclusions made in the recent Swiss government 5G report are found here (https://www.newsd.admin.ch/newsd/message/attachments/59385.pdf; https://www.newsd.admin.ch/newsd/message/attachments/59384.pdf)

According to Le Courrier November 19, 2019 Martin Röösli presented the conclusion in an interview in the following way:

"Sur l'aspect sanitaire pur, «le groupe de travail constate que, jusqu'à présent, aucun effet sanitaire n'a été prouvé de manière cohérente en dessous des valeurs limites d'immissions fixées», résume Martin Röösli, professeur d'épidémiologie environnementale à l'Institut tropical et de santé publique suisse." https://lecourrier.ch/2019/11/29/lenigme-5g-demeure/

Martin Röösli told Le Courrier (translated to English): "No health effect has been consistently proven."

That is contrary to the opinion expressed by 252 EMF scientists from 43 countries who have published peer-reviewed research on the biologic and health effects of nonionizing electromagnetic fields (RF-EMF): (https://www.emfscientist.org/index.php/emf-scientist-appeal)

"Numerous recent scientific publications have shown that RF-EMF affects living organisms at levels well below most international and national guidelines. Effects include increased cancer risk, cellular stress, increase in harmful free radicals, genetic damages, structural and functional changes of the reproductive system, learning and memory deficits, neurological disorders, and negative impacts on general well-being in humans. Damage goes well beyond the human race, as there is growing evidence of harmful effects to both plant and animal life."

The current Swiss government 5G report concluded that there is absence of short term health symptoms and absence or insufficient evidence of long term effects. See page 69 in the French version: https://www.newsd.admin.ch/newsd/message/attachments/59385.pdf

and page 67 in the German version: https://www.newsd.admin.ch/newsd/message/attachments/59384.pdf

For glioma, neurilemmoma (Schwannoma) and co-carcinogenic effects there was evaluated to be limited evidence in the Swiss report. There was judged to be insufficient evidence for effects on the child from prenatal exposure or the child's own mobile phone use. Regarding cognitive effects, fetal development and fertility (sperm quality) the judgement was that the evidence on harmful effects is insufficient. Other important endpoints such as blood-brain barrier, cell proliferation, apoptosis (programmed cell death), oxidative stress (reactive oxygen species; ROS) and gene and protein expression were not evaluated.

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This Swiss government evaluation is scientifically inaccurate and is in opposition to the opinion of the majority of the scientists in this field, see e.g. https://www.emfscientist.org/index.php/emf-scientist-appeal and www.5Gappeal.eu

We are concerned that the related reports led by Martin Röösli may be influenced by his ties to the wireless industry (Conflicts of Interests). This can be the situation for other members of the evaluating group as well.

CONFLICTS OF INTERESTS

1. Funding from telecom companies

Martin Röösli has been a member of the board of the telecom funded Swiss FSM organization and he has received funding from the same organization.

https://www.emf.ethz.ch/en/foundation/organisation/

https://www.emf.ethz.ch/en/promotion/publications/?author=664

https://www.emf.ethz.ch/fileadmin/redaktion/public/downloads/3_angebot/wissensvermittlung/jahresberichte/fsm-jb17 web 72dpi red.pdf

2. Member of ICNIRP

Martin Röösli is a member of ICNIRP https://www.icnirp.org/en/about-icnirp/commission/details/member-roosli.html Already in 2008 the Ethical Council at Karolinska Institute in Stockholm stated that being a member of ICNIRP is a potential conflict of interest. Such membership should always be declared. This verdict was based on activities by Anders Ahlbom (at that time a member of ICNIRP) but is a general statement (2008-09-09. Dnr: 3753-2008-609). In summary:

"För att beslutsfattare och allmänhet skall kunna dra grundade slutsatser och tolkningar krävs att alla parter tydligt anger bindningar och andra förhållanden som kan påverka eventuella uttalanden. AA bör således när han uttalar sig för myndigheters räkning och i andra sammanhang ange kopplingen till ICNIRP."

It is required that all parties clearly declare ties and other circumstances that may influence statements, so that decision makers and the public may be able to make solid conclusions and interpretations. AA should thus declare his tie to ICNIRP whenever he make statements on behalf of authorities and in other circumstances (translated to English).

2.1 About ICNIRP (International Commission on Non-Ionizing Radiation Protection)

ICNIRP is a non-governmental organization (NGO) based in Germany. Members are selected in an internal process and ICNIRP lacks transparency and does not represent the opinion of the majority of the scientific community involved in research on health effects from EMF.

The majority, or 252 scientists, have declared that:

"ICNIRP continues to the present day to make these assertions, in spite of growing scientific evidence to the contrary. It is our opinion that, because the ICNIRP guidelines do not cover long-term exposure and low-intensity effects, they are insufficient to protect public health." https://emfscientist.org/index.php/emf-scientist-appeal

ICNIRP does only acknowledge thermal (heating) effects from RF-EMF. Thus the large body on detrimental non-thermal effects are neglected. This was further discussed in a recent peer-reviewed scientific article

https://www.spandidos-publications.com/10.3892/wasj.2019.28

See page 1: "It seems as if the majority of decision-makers, such as politicians, are not informed and educated about the risks to human health and the environment from radiofrequency (RF) radiation. Instead, if anything, they rely mainly on evaluations made by different organizations with inborn conflicts of interest, as outlined (1,2). One such organization is the International Commission on Non-Ionizing Radiation Protection (ICNIRP) that has repeatedly ignored scientific evidence on the adverse risks of RF radiation to humans and the environment. The majority of countries use their unscientific evaluation relying only on the thermal (heating) paradigm for biological effects. This is done in spite of clear scientific evidence on so-called non-thermal effects as outlined below. The 13 commissioners of the ICNIRP should be [held] responsible for that malpractice."

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Note especially at page 2: "Recently, ICNIRP published a note on the NTP (7,8) and Ramazzini Institute (9) animal studies (13). This note is based on the view by the 13 Commission members and represents the misconception and wrong evaluation of these studies; for example it is claimed that the histopathological evaluation was not blinded, a false statement. ICNIRP also claims that there is no verified mechanism for RF radiation carcinogenesis in spite of well-designed studies showing the contrary, e.g., oxidative stress (14) and DNA damage (15). There are also several other wrong suggestions, such as that some of the NTP findings were due to heat caused by RF radiation. On the contrary, heat is not a known carcinogen. The wrong statements by ICNIRP have already been rebutted (16)."

The above cited ICNIRP statements can be found in the published "ICNIRP Note: Critical Evaluation of Two Radiofrequency Electromagnetic Field Animal Carcinogenicity Studies Published in 2018". https://www.ncbi.nlm.nih.gov/pubmed/31464775

It is remarkable that this note claims that e.g. the histopathological evaluation was not blinded. In fact unfounded critique of the NTP study had already been rebutted, but seems to have had little or no impact on this ICNIRP note casting doubt on the animal study findings.

"This commentary addresses several unfounded criticisms about the design and results of the NTP study that have been promoted to minimize the utility of the experimental data on RFR for assessing human health risks. In contrast to those criticisms, an expert peer-review panel recently concluded that the NTP studies were well designed, and that the results demonstrated that both GSM- and CDMA-modulated RFR were carcinogenic to the heart (schwannomas) and brain (gliomas) of male rats" https://www.ncbi.nlm.nih.gov/pubmed/30243215

In contrast to the opinion of 13 ICNIRP members the IARC advisory group of 29 scientists from 18 countries has recently stated that the cancer bioassay in experimental animals and mechanistic evidence warrants high priority re-evaluation of the RF induced carcinogenesis

(Advisory Group recommendations on priorities for the IARC Monographs. Lancet Oncology 2019;20:763-764 doi: 10.1016/S1470-2045(19)30246-3)

2.2 ICNIRP draft

On 11 July 2018 ICNIRP released a draft on guidelines for limiting exposure to time-varying electric, magnetic and electromagnetic fields (100 kHz to 300 GHz). It was open for public consultations until 9 October 2018. Appendix B was based on assessment on health risks based on a literature survey (https://www.icnirp.org/en/activities/public-consultation/index.html).

Surprisingly the IARC classification from 2011 of RF-EMF exposure as class 2B, 'possibly' carcinogenic to humans was ignored in the background material to the new ICNIRP draft on guidelines. Remarkably one of the ICNIRP commission members, Martin Röösli, (https://www.icnirp.org/en/about-icnirp/commission/index.html) was also one of the IARC experts evaluating the scientific RF carcinogenicity in May 2011 (https://monographs.iarc.fr/wp-content/uploads/2018/06/mono102-F05.pdf). Röösli did not abstain from the IARC Group 2B classification and should be well aware of that decision, but seems now to neglect that fact being an ICNIRP member. That may be due to the fact that the IARC classification contradicts the scientific basis for the ICNIRP guidelines.

Thus, ICNIRP provides scientifically inaccurate reviews for various governments. The following analysis from the UK shows these inaccuracies and falsehoods: https://doi.org/10.1515/reveh-2016-0060

This has also been further discussed in:

Hardell L: World Health Organization, radiofrequency radiation and health - a hard nut to crack (Review). Int J Oncol 51: 405-413, 2017 https://www.spandidos-publications.com/10.3892/ijo.2017.4046

Martin Röösli is a member of the ICNIRP commission and thus responsible for these biased statements from ICNIRP that are not based on solid scientific evidence.

SCIENTIFIC MISREPRESENTATION EXAMPLES

Published article

In the following section an article by Martin Röösli et al. is discussed. It represents biased evaluation of cancer risks from mobile phone use and is yet another example of Martin Röösli's lack of objectivity and impartiality.

Röösli M, Lagorio S, Schoemaker MJ, Schüz J, Feychting M. Brain and Salivary Gland Tumors and Mobile Phone Use: Evaluating the Evidence from Various Epidemiological Study Designs. Annu Rev Public Health. 2019 Jan 11. doi: 10.1146/annurev-publhealth-040218-044037 https://www.ncbi.nlm.nih.gov/pubmed/30633716

The article has many severe scientific deficiencies. One is that the results on use of cordless phones as a risk factor for brain tumors are not discussed. In fact detailed results on cordless phones in the Hardell group studies are omitted.

When discussing glioma risk all results on cumulative use of mobile phones as well as ipsilateral or contralateral use in relation to tumor localization in the brain are omitted from the figures in the main text. Some results such as cumulative use can be found in Supplemental Material, although the increased risk among heavy users is disregarded (see Interphone, Hardell group studies, Coureau et al.). In fact, in Supplemental Figure 4 all results on long-term (10+) use of mobile phones are above unity for glioma and neuroma. No results are given for ipsilateral mobile phone use that is of large biological importance. Results on cumulative use, latency and ipsilateral (same side of tumour and mobile phone) use are most important for assessment the risk and have in fact shown a consistent pattern of increased risk.

Röösli et al. discuss recall bias as the reason for increased risk. The Hardell group studies included all types of brain tumours. In one analysis meningioma cases in the same study were used as the 'control' entity. https://www.ncbi.nlm.nih.gov/pubmed/25466607. Still a statistically significant increased risk for glioma was found for mobile phone use (ipsilateral odds ratio (OR) = 1.4, 95 % confidence interval (CI) = 1.1-1.8, contralateral OR = 1.0, 94 % CI = 0.7-1.4) and for cordless phone use (ipsilateral OR = 1.4, 95 % CI = 1.1-1.9, contralateral OR = 1.1, 95 % CI = 0.8-1.6). If the results were 'explained' by recall bias similar results would have been found both for glioma and meningioma. These results clearly show that the results in the Hardell group studies cannot be explained by a systematic difference in assessment of exposure between cases and controls. These important methodological findings were disregarded by Röösli et al.

In the analyses of long term use of mobile phones, the Danish cohort study on mobile phone use is included by Röösli et al. That particular study was in the 2011 IARC evaluation concluded to be uninformative due to the many shortcomings in exposure assessment. It is remarkable that it is now included in the risk calculations since Martin Röösli was a member of the IARC evaluation group.

The many shortcomings in the Danish cohort study are omitted by Röösli. These shortcomings have been discussed in detail in a peer-reviewed article. https://www.ncbi.nlm.nih.gov/pubmed/22755267

Regarding animal studies the important Ramazzini Institute study is just mentioned as a reference, but results are not discussed. In fact these findings give supportive evidence on the risk found in human epidemiology studies as well as the results in the NTP animal study.

Also for incidence studies all results are not presented in an adequate way. Much emphasis is given to the Swedish Cancer Register data, but the many shortcomings in the reporting of brain tumor cases to the register are not discussed. These have been presented in detail in studies but are disregarded by the authors.

https://www.mdpi.com/1660-4601/12/4/3793

In fact there is clear evidence from several countries on increasing numbers of patients with brain tumour:

Denmark: https://microwavenews.com/short-takes-archive/spike-brain-cancer-denmark

England: https://www.powerwatch.org.uk/news/20180709-glioma-increase-paper.asp

France: https://www.phonegatealert.org/en/press-release-brain-cancers-4-times-more-new-cases-of-glioblastoma-in-2018-according-to-public-health-france

Sweden: https://www.mdpi.com/1660-4601/12/4/3793/htm

This article by Röösli and others does not represent a true scientific evaluation of brain and head tumor risk associated with use of wireless phones and should be disregarded. By omitting results of biological relevance and including studies that have been judged to be uninformative the authors come to the conclusion that there are no risks: "In summary, current evidence from all available studies including in vitro, in vivo, and epidemiological studies does not indicate an association between MP [mobile phone] use and tumors developing from the most exposed organs and tissues."

The authors disregard the concordance of increased cancer risk in human epidemiology studies, animal studies and laboratory studies. It is unfortunate that the review process of this article has not been of adequate quality. Finally, there is no statement in the article of funding of the work which is not acceptable. It is not plausible that there was no funding for the study. Due to the many limitations this article should never have been published.

CEFALO

In 2011 Martin Röösli and others published a study called CEFALO on brain tumor risks for children using mobile phones. The study seems to have been designed to misrepresent the true risks since Röösli and his colleagues asked the study participants the following question:

"How often did [child] speak on the cordless phone in the first 3 years he/she used it regularly?"

There are no scientific valid reasons to ask such a question. The result is a misrepresentation and a wrong exposure classification since the researchers willingly omitted any increase in the child's use of and exposure from cordless phone radiation after the first three years of use. This unscientific treatment of cordless phone exposure was not mentioned other than in a footnote in Table 6 and in the method section but no explanation was given: "Specifically, we analyzed whether subjects ever used baby monitors near the head, ever used cordless phones, and the cumulative duration and number of calls with cordless phones in the first 3 years of use."

https://www.ncbi.nlm.nih.gov/pubmed/21795665

The deliberate exclusion of a complete exposure history on use of cordless phones is the more remarkable since previous studies had shown that also these phone types in addition to mobile phones increase brain tumor risk. This represents scientific misconduct.

In a critical comment we wrote:

"Further support of a true association was found in the results based on operator-recorded use for 62 cases and 101 controls, which for time since first subscription > 2.8 years yielded OR 2.15 (95% CI 1.07-4.29) with a statistically significant trend (P = 0.001). The results based on such records would be judged to be more objective than face-to-face interviews, as in the study that clearly disclosed to the interviewer who was a case or a control. The authors disregarded these results on the grounds that there was no significant trend for operator data for the other variables – cumulative duration of subscriptions, cumulative duration of calls and cumulative number of calls. However, the statistical power in all the latter groups was lower since data was missing for about half of the cases and controls with operator-recorded use, which could very well explain the difference in the results".

Our conclusion was that:

"We consider that the data contain several indications of increased risk, despite low exposure, short latency period, and limitations in the study design, analyses and interpretation. The information certainly cannot be used as reassuring evidence against an association, for reasons that we discuss in this commentary." https://www.ncbi.nlm.nih.gov/pubmed/22182218

This is in contrast to the authors that claimed that the study was reassuring of no risk in a press release from Martin Röösli, July 28, 2011:

"Kein erhöhtes Hirntumorrisiko bei Kindern und Jugendlichen wegen Handys... Die Resultate sind beruhigend"... https://www.unibas.ch/de/Aktuell/News/Uni-Research/Keinerh-htes-Hirntumorrisiko-bei-Kindern-und-Jugendlichen-wegen-Handys.html

In fact a similar press release was issued by the Karolinska Institute in Stockholm stating "Reassuring results from first study on young mobile users and cancer risk...The so called CEFALO study does not show an increased brain tumor risk for young mobile users." https://web.archive.org/web/20130203041836/https://ki.se/ki/jsp/polopoly.jsp?d=130&a=125250&l=en&newsdep=130

Considering the results in the study and the many scientific shortcomings in the study these press releases are not correct.

RECOMMENDATIONS

- Consider to exclude Martin Röösli from a position as an objective expert on health effects of RF-EMF.
- Switzerland should declare a moratorium on 5G until independent research, performed by scientists without ties to industry, confirms the safety (www.5Gappeal.eu).
- The excuse that 5G is currently deployed at 4G frequency and therefore is safe is not scientifically correct. 3G, 4G, and WiFi are also not safe.

- We recommend an educational campaign by Swiss Department of Education (WBF/ EAER) to educate the public about health risks of RF-EMF exposure, and safe use of technology (e.g., deployment of wired internet in schools) as previously recommended by the European Council resolution 1815 in 2011 and The EMF Scientist Appeal (www.emfscientist.org)
- We recommend that the government takes steps to significantly reduce exposure of public to RF-EMF, be it 5G, 4G, WiFi, Bluetooth, Smart-meters, etc.

CONCLUSION

It is imperative that the chair and other experts evaluating scientific evidence and assessing health risks from RF radiation do not have such clear conflicts of interests or bias as Martin Röösli has. Indeed, being a member of ICNIRP and being funded by industry directly or through an industry funded foundation, constitutes clear conflicts of interest. Furthermore, it is recommended that the interpretation of results from studies of health effects of radiofrequency radiation should take sponsorship from telecom industry into account.

Respectfully submitted

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