



## US National Toxicology Program Animal Study – Final Report

The US National Toxicology Program (NTP) released its Technical Reports<sup>1</sup> on the results of its two-year studies of radio frequency (RF) exposure on mice and rats. The results were subject to a three day scientific review meeting in March 2018.

The NTP studies found that exposure to cell phone signals at much higher levels than the current whole body safety limits<sup>2</sup> set by the Federal Communications Commission resulted in “clear evidence of tumors in the hearts of male rats... some evidence of tumors in the brains of male rats...(and)... some evidence of tumors in the adrenal glands of male rats.”<sup>3</sup> These classifications follow the NTP established categories of evidence.

The NTP scientists also noted that “(f)or female rats, and male and female mice, it was unclear, also known as equivocal, whether cancers observed in the studies were associated with exposure to RFR.”

An NTP Fact Sheet also addressed the question as to whether the findings apply to humans:

*“The findings in animals cannot be directly applied to humans for two key reasons:*

- *The exposure levels and durations were greater than what people may receive from cell phones.*
- *The rats and mice received RFR across their whole bodies, which is different from the more localized exposures humans may receive, like from a cell phone in their pocket or next to their head.”*

And the NTP Fact Sheet also added:

*“The lowest exposure level used in the studies was equal to the maximum local tissue exposure currently allowed for cell phone users. This power level rarely occurs with typical cell phone use. The highest exposure level in the studies was four times higher than the maximum power level permitted for local tissues.”*

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) recently published a research note<sup>4</sup> that looked at both the strengths and weakness of both the NTP study and another recent animal carcinogenesis study by Falcioni et al.<sup>5</sup> ICNIRP concluded:

<sup>1</sup> The final NTP Technical Reports for rats is available from: [https://www.niehs.nih.gov/ntp-temp/tr595\\_508.pdf](https://www.niehs.nih.gov/ntp-temp/tr595_508.pdf) and for mice: [https://www.niehs.nih.gov/ntp-temp/tr596\\_508.pdf](https://www.niehs.nih.gov/ntp-temp/tr596_508.pdf)

<sup>2</sup> The FDA Statement states: “In fact, we only begin to observe effects to animal tissue at exposures that are 50 times higher than the current whole body safety limits set by the FCC for radiofrequency energy exposure.” [https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm624809.htm?utm\\_campaign=11012018\\_Statement\\_FD\\_A+statement+on+radiofrequency+radiation+study&utm\\_medium=email&utm\\_source=Eloqua](https://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm624809.htm?utm_campaign=11012018_Statement_FD_A+statement+on+radiofrequency+radiation+study&utm_medium=email&utm_source=Eloqua)

<sup>3</sup> NTP Fact Sheet: [https://www.niehs.nih.gov/health/materials/cell\\_phone\\_radiofrequency\\_radiation\\_studies\\_508.pdf](https://www.niehs.nih.gov/health/materials/cell_phone_radiofrequency_radiation_studies_508.pdf)

<sup>4</sup> ICNIRP Note on Recent Animal Carcinogenesis Studies 04/09/2018 available from the ICNIRP website: <https://www.icnirp.org/cms/upload/publications/ICNIRPnote2018.pdf>

<sup>5</sup> Falcioni L, Bua L, Tibaldi E, Lauriola M, De Angelis L, Gnudi F, Mandrioli D, Manservigi M, Manservigi F, Manzoli I, Menghetti I, Montella R, Panzacchi S, Sgargi D, Strollo V, Vornoli A and Belpoggi F (2018). *Report of final results regarding brain and heart tumors in Sprague-Dawley rats exposed from prenatal*

*"Although the NTP (2018a, b) and Falcioni et al. (2018) studies used large numbers of animals, best laboratory practice, and exposed animals for the whole of their lives, consideration of their findings does not provide evidence that radiofrequency EMF is carcinogenic. ... ICNIRP considers that the NTP (2018a, b) and Falcioni et al. (2018) studies do not provide a consistent, reliable and generalizable body of evidence that can be used as a basis for revising current human exposure guidelines. Further research is required that addresses the above limitations."*<sup>6</sup>

The United States Food and Drug Administration in response to the release of the NTP Final Report issued a statement<sup>7</sup> that stated:

*"After reviewing the study, we disagree, however, with the conclusions of their final report regarding "clear evidence" of carcinogenic activity in rodents exposed to radiofrequency energy.*

*In the NTP study, researchers looked at the effects of exposing rodents to extremely high levels of radiofrequency throughout the entire body. This is commonly done in these types of hazard identification studies and means that the study tested levels of radiofrequency energy exposures considerably above the current whole body safety limits for cell phones. Doing this was intended to help contribute to what we already understand about the effects of radiofrequency energy on animal tissue. In fact, we only begin to observe effects to animal tissue at exposures that are 50 times higher than the current whole body safety limits set by the FCC for radiofrequency energy exposure.*

*We agree that these findings should not be applied to human cell phone usage."*

The FDA concluded:

*"Based on our ongoing evaluation of this issue, the totality of the available scientific evidence continues to not support adverse health effects in humans caused by exposures at or under the current radiofrequency energy exposure limits. We believe the existing safety limits for cell phones remain acceptable for protecting the public health."*

The NTP studies are likely to be repeated, at least in part, by other research groups to determine whether the NTP findings can be confirmed or not, and the results like all scientific studies published in this area, will now be considered more broadly in the context of all the available evidence by experts and public health agencies around the world.

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*life until natural death to mobile phone radiofrequency field representative of a 1.8 GHz GSM base station environmental emission.* Environmental Research. <https://doi.org/10.1016/j.envres.2018.01.037>.

<sup>6</sup> ICNIRP, Op. cit. p.6

<sup>7</sup> FDA Statement, Op. cit.