

**High Exposure to Radio Frequency Radiation Associated With Cancer in Male Rats
Telephone Press Conference
10/31/18
2:00 pm ET**

Operator: Good afternoon and welcome to today's briefing from the National Toxicology Program to announce its final conclusions for cell phone studies in rats and mice. This is an embargo to press briefing. All information presented today is embargoed until tomorrow, November 1st at 10:00 AM. This is a 60-minute call. It will start with opening remarks by Dr. John Bucher, Senior Scientist, at the National Toxicology Program and a question period will follow.

At this time, all participants are in a listen-only mode. Members of the press may register to ask a question at any time by pressing the star (*) and one (1) on your touch-tone telephone. When you are called upon to ask your question, please state your name and your news organization. Please note that this call is being recorded today.

We will now start the briefing and I will turn the call over to Dr. John Bucher. Please go ahead, Dr. Bucher.

Dr. John Bucher: Thank you. Good afternoon. I'm Dr. John Bucher, former Associate Director of the US National Toxicology Program or NTP for short. I'm currently a senior scientist with the program. I'm joined today by Dr. Michael Wyde, Lead Toxicologist for the NTP radio frequency radiation studies. The NTP is a federal inter-agency program headquartered at the National Institute of Environmental Health Sciences, which is part of the National Institutes of Health.

NTP's mission is to coordinate and facilitate toxicology research and testing across the department of health and human services including the

NIH, Food and Drug Administration, and the National Institute for Occupational Safety and Health, which is part of the Centers for Disease Control and Prevention.

One of our charges is to perform comprehensive toxicology and cancer studies on agents of public health concern. Since the inception of the NTP in 1978, we've studied thousands of agents, primarily chemicals, but also physical agents such as extremely low frequency electromagnetic radiation and now the radio frequency radiation used in cellular telecommunications.

These are typically evaluated in experimental animal studies conducted with rodents and are performed in response to nominations from a variety of sources. The FDA nominated radio frequency radiation used in cellular communications for study by the NTP. We designed and conducted studies exposing the whole bodies of rats and mice to high levels of radio frequency radiation for most of their lifetimes. The exposures were the frequencies and modulations used in 2G and 3G cell phone technologies.

Tomorrow at 10:00 AM, we're posting the final technical reports and data from these studies on our website. The conclusions represent the interpretations of the studies by NTP scientists after taking into consideration comments from the public and from an expert peer review panel held in March of this year.

We use a four-level scale to communicate the confidence that we have in the association between increases in cancers in rodents and their exposures to the agent under study. The scale includes clear evidence or the highest level of confidence; some evidence, a lower-level of confidence but still considered a positive cancer finding; equivocal evidence, meaning, an uncertain finding; or no evidence.

We have concluded that there was clear evidence that male rats developed cancerous heart tumors called malignant schwannomas. The occurrence of malignant schwannomas in the hearts of male rats is the strongest cancer finding in our study.

We've also concluded that there was some evidence for tumors in the brain and adrenal gland of exposed male rats. The brain tumors were malignant gliomas and the adrenal gland tumors are termed pheochromocytomas.

For female rats and male and female mice, we only saw equivocal evidence, meaning, it was unclear whether the cancers observed were associated with exposure to radio frequency radiation.

We also looked for other non-cancer health conditions like changes in body weight and other evidence of tissue injury. For example, there were changes in the typical patterns of age-related degeneration in the hearts of exposed male and female rats. This observation supported our conclusion that the tumors in the hearts of male rats were associated with the exposures to radio frequency radiation.

We also saw lower birth weights in rats that were exposed while in the womb, although, as the animals grew, the body weights caught up with those of unexposed control animals. We saw evidence of DNA damage in some tissues of some animals but we need to replicate and further study these results before commenting on their biological significance.

In our final report, you'll notice that some of the cancer conclusions differ from our preliminary conclusions released as drafts report last February. The panel of external scientific experts who thoroughly reviewed the study last March recommended higher levels of confidence for several conclusions and we accepted their recommendations.

Let me briefly summarize what changed: For male rats, we re-classified the malignant schwannomas in the heart from some evidence, to clear evidence. We also re-classified malignant glioma of the brain and the pheochromocytomas in the adrenal gland from equivocal evidence to some evidence.

For female rats, we re-classified malignant schwannoma in the heart from no evidence to equivocal evidence of carcinogenic activity. Again, equivocal means it's unclear whether the tumors we observed were associated with exposure to radio frequency radiation. Our conclusions for the mouse study and other conclusions for the rat study remained unchanged from the draft reports.

The reports lay out the reasoning and the process used by the NTP to reach these conclusions.

We believe these findings are significant for several reasons: exposure to radio frequency radiation has long been thought to be of no health concern as long as the energy level was low and didn't cause heating of the tissues. Based on our results, we're planning further studies to confirm that the experimental evidence continues to support this position.

Secondly, although we studied radio frequency radiation used by 2G and 3G cell phones, our studies have shown us where to look for possible biological effects of newer technologies. With this understanding, our future studies can be done more quickly and efficiently.

Even though our studies are an important and necessary step forward, I want to emphasize that the exposures used in our studies are not directly comparable to the exposures that humans typically experience when using a cell phone. In our studies, rats and mice receive radio frequency radiation across their whole bodies. By contrast, people are mostly exposed in specific local tissues close to where they hold the phone.

In addition, the exposure levels and durations in our studies were greater than what people experience. The lowest whole-body exposure level used in our studies was similar to the maximum local tissue exposure currently allowed for cell phone users. This energy level infrequently occurs with typical cell phone use. The highest exposure level in our studies was four times higher than the maximum energy level permitted, again, for local tissue exposures next to where one holds the phone.

To conduct the studies, we used two modulations of cell phone radio frequency radiation termed GSM and CDMA. These modulations are commonly used to transmit cell phone signals in the US and Europe.

The animals were housed in chambers specifically designed and built for these studies. Exposure to radio frequency radiation began in the womb for rats and at five to six weeks of age for mice and continued for up to two years for most of their natural lifetime. Radio frequency radiation exposure was intermittent, 10 minutes on and 10 minutes off, totaling about nine hours each day. The energy levels ranged from 1.5 to 6 watts per kilogram body weight in rats and 2.5 to 10 watts per kilogram body weight in mice.

As mentioned earlier, the radio frequency radiation frequencies and modulations we used mimic those used in 2G and 3G networks, which were standard for cell phones when the study was designed. These studies did not investigate the types of radio frequency radiation used for 4G, 4G LTE, Wi-Fi, or 5G networks.

For future studies, NTP is building smaller exposure chambers that will make it easier to evaluate newer telecommunications technologies in weeks or months rather than years. These studies will focus on measurable physical indicators or biomarkers, potential effects from radio frequency radiation. These may include changes in physiological measures such as

heart rate and behaviors indicative of stress or molecular measures such as DNA damage and changes in gene expression in exposed tissues, which can be detected much sooner than cancer.

Lastly, I'd like to acknowledge that the equipment used to expose the animals designed and constructed in collaboration with experts from the National Institute of Standards and Technology here in the US, the IT'IS Foundation in Switzerland, and IIT Research Institute in Chicago. The actual animal exposures were carried out at the IIT laboratories in Chicago. These organizations all did a remarkable job working with staff at NTP to accomplish these technically demanding studies.

With that, we'd be happy to take your questions.

Operator: At this time, members of the press may ask questions. Please press the star (*) and one (1) on your touch--tone phone. You may withdraw your question at any time by pressing the pound (#) key. Once again, to ask a question, please press the star (*) and one (1) keys on your telephone. We will go ahead and pause for a moment to allow questions to queue. [Pause] We'll go ahead and take our first question from Paul Kirby from TR Daily. Please go ahead, your line is open.

Paul Kirby: Thanks for taking my call. I just wanted to clarify. You went through the categories where the expert panel recommended upgrades to a four, correct? In other words, if you consider the types of GSM or CDMA and then the male, female, and then the rats, mice, there are four areas where they suggested operating, you accepted all four, is that correct?

Dr. John Bucher: Yes, that is correct. The upgrades are listed in the press release. Yes, we accepted all of the recommendations of the peer group panel.

Paul Kirby: Okay, thank you.

Operator: We will go ahead and take our next question from Taylor Scott from ABC7. Please go ahead, your line is open.

Taylor Scott: Thanks for taking my call. Are you saying that you think this cell phone radiation is safe and does any health agency think it's safe that you know of? Have they submitted any scientific opinion that it's safe? Because we hear some federal health agencies saying that it is safe.

Dr. John Bucher: NTP is a research organization and we're charged with developing data for regulatory agencies and the public. We have worked very closely with various regulatory agencies throughout - they conduct of these studies and continue to work with them as we go through the interpretation phases.

Taylor Scott: I know but that doesn't answer my question. Do you think this radiation is safe?

Dr. John Bucher: Well, the issue is one of exposure and as I indicated in my remarks, I think we need to continue to work with the various agencies to, in essence, look at the distance between the exposures in that people receive in daily life using these phones and the exposure levels that were used in the studies that we did to try to understand what's in essence basically a margin of safety.

We do believe that the tumor responses that we've seen in our studies are real, they are associated with radio frequency radiation but as I indicated in my opening remarks, the exposures were through higher power levels than people typically receive and for longer durations. So, we still need to...

Taylor Scott: Why are you doing those higher power emissions versus just something that comes out of a 2G or 3G phone and on top of it, are we behind the time on testing if we've already got 5G coming out?

Dr. John Bucher: The issue of keeping up with the technology is one that we're very much aware of and is why we are designing chambers to move forward with further studies. The tenets of toxicology and the basis of safety assessment studies in general are to understand the exposures to rodents and other experimental animals can tolerate and understand the exposure conditions under which they do or don't exhibit some toxic responses. We then take that information and we compare that with the levels of exposure that humans receive to whatever chemical or substances we're talking about and look at that distance, as I said before, the margin of safety.

The 2G and 3G technologies that we studied are, in fact, still used for texting and voice communications in today's cellular telephone so there's relevance there. Basically, these other technologies are overlaid on the 2G and 3G technologies in the development of smart phones and communication devices that are capable of data streaming.

Taylor Scott: Thanks for all your hard work and I appreciate you sharing this study with us.

Dr. John Bucher: Thank you.

Operator: Once again, if you would like to ask a question, please press the star (*) and one (1) on your touch-tone phone. We'll go ahead and take our next question from Dan Vergano. Please go ahead, your line is open.

Dan Vergano: Thanks. Dan Vergano with BuzzFeed News. I'm wondering, is there a mechanism at work that you guys can identify in causing these tumors? Also, is there an explanation for the less strong effect or non-effect on a certain effect using mice versus rats?

Dr. John Bucher: Let me take the mice versus rats issue first. Throughout these studies that we've done, we've noted that mice were much less susceptible to any sort of a response to radio frequency radiation in our hands. The first set of

studies that we did looked simply at changes in body temperature and we found that body temperatures were much less affected by radio frequency in mice than they were in rats as what we anticipated. In fact, I think it's been shown in modeling scenarios that the rats with a somewhat larger body size tended to absorb the radio frequency radiation more so than the mice. What was the first part of your question? I'm sorry.

Dan Vergano: What is the mechanism for this radio frequency? Is this DNA damage caused by it somehow or is it the thermal effect? Are the rats absorbing more heat? What's the mechanism?

Dr. John Bucher: This is a subject that we hope to be able to explore in more detail in the future studies. There have been a lot of mechanisms that have been proposed for radio frequency radiation and they include, as you indicate, DNA damage of which we found some evidence but we really want to look at that more closely before we make any conclusions. Also, oxidative stress has been proposed as a general mechanism. The issue of heating is a complicated one. Radio frequency radiation interacts with biological tissues to cause some degree of heating and the cellular telephone communication standards are set to prevent significant tissue heating during the use of cell phones.

That's really at the nexus of where we're taking our research program. Now that we know somewhat what tissues are somewhat susceptible and we can focus in and use molecular technologies rather than pathology, if you will, to try to move forward.

Dan Vergano: Very good. Thank you.

Operator: [Pause] Again, if you would like to ask a question, please press the star (*) and one (1) on your touch-tone phone. We'll go ahead and take our next question from Louis Slesin. Please go ahead, your line is open.

Louis Slesin: Thank you for taking my question. In your report, you draw the parallels between Schwann cells and glial cells. I wonder if you could comment on the fact that these two types of cells are the ones that show the greatest response where you see the tumors and these are the cells also that you see the response in genealogical studies with acoustic neuroma and brain tumors. There seems to be a pattern of cell-type here and I'd like to hear what you have to say about that.

Dr. John Bucher: Well, obviously, we've noted that some of the findings from the very early epidemiology studies, looking at gliomas and acoustic neuromas in humans were, I believe, some of the driving factors in the nomination of radio frequency radiation to the NTP and of course, that's been an area of concern and continuously an area of concern at the epidemiology community. I really can't speculate at this point as to a mechanism or reason why these cell-types might be the ones that seem to be responding. I think that if we knew that, we'd be quite a bit further down the road in understanding how to perhaps prevent future issues related to the use of radio frequency radiation.

Louis Slesin: I understand you can't do the mechanisms but the fact that these cell-types are so similar and you show it increased your confidence in your conclusions?

Dr. John Bucher: Well, the evaluation of the conclusions by NTP and by the purity of panel was at least attempted to be done in a two-phased way. One is you look at the study as we see it and you evaluate the information and looking at the similarity of the cell-types I think is a second level of evaluation that needs to be done with respect to any potential regulatory actions related to radio frequency radiation.

Louis Slesin: Thank you.

Operator: Once again, if you would like to ask a question, please press the star (*) and one (1) on your touch-tone phone. We will go ahead and take our next question from Roni Rabin. Please go ahead, your line is open.

Roni Rabin: You just commented. This wasn't going to be my question but I'm going to comment on it, too. The exposure to radio frequency radiation. The exposure began in the womb for the rats and at five to six weeks old for the mice, could that explain some of the differences in the findings?

Dr. John Bucher: Well, that's certainly conceivable. One of the reasons that we designed the study with rats beginning with the pregnant animals was to expand the potential ages ranges for exposures that might be susceptible and that is clearly something that we need to follow up on.

Roni Rabin: Is there any precautionary advice for pregnancy? There has been some concern about the prenatal period and gestation period. I realize that would be a leap but, I mean...

Dr. John Bucher: We make the information available and we can certainly direct folks to websites and the phone inserts that used to be accompanying cell phones that recommend that to limit exposure that's directly associated with the body. Use earbuds and other ways of using your telephone to reduce exposures.

Roni Rabin: Would that be particularly for during pregnancy? I'm just saying that there's [Crosstalk].

Dr. John Bucher: I don't know enough to answer that question at this moment. I'm sorry. These recommendations would be for anyone who would use a cell phone.

Roni Rabin: The male, female difference here in the rat animals, is that something we need to take note of or be dismissive of? I gather that different genders of animals often will respond differently in these. Do women like not have to worry or [Laughter] is that not a correct conclusion?

Dr. John Bucher: Well, we don't have a good explanation at the moment for the sex difference in response. As you mentioned, it's not unusual to see sex differences in cancer responses or other toxicities. The female rats generally attain a weight that is only, say, two-thirds or so that of the male rats and is, in fact, the absorption of radio frequency radiation is, as we suspect, governed in some part by the larger animals receiving more and absorbing more radiation, then it would make sense that the males were responding and perhaps not the females. Although, I will say that there were malignant schwannomas that were observed in some of the exposed female animals.

Roni Rabin: Thank you.

Operator: Again, to ask a question, please press the star (*) and one (1) on your touch-tone phone. We'll go ahead and take our next question from Maggie Fox from NBC News. Please go ahead, your line is open.

Maggie Fox: Thanks very much, Dr. Bucher. Your answers are so patient and we really appreciate it. The last time we all spoke to you, I think we asked you, do you use a cell phone and would you let your kids use a cell phone? Based on the renewed evidence, how do you feel about using cell phones?

Dr. John Bucher: I've never been a heavy user of a cell phone. I have become, I guess, as we've gone through these studies, a little more aware of my use of cell phones and if I'm making a short call, I have absolutely no hesitation at all in picking up the phone and using it in a traditional manner. If I'm on a conference call for an hour or two, I tend to just think about using earbuds or some other way of increasing the distance between the cell phone and my body.

Maggie Fox: Thank you.

Operator: Again, to ask a question, please press the star (*) and one (1) on your touch-tone phone. We will take our next question from William Broad. Please go ahead, your line is open.

William Broad: Hi. Thank you very much for going through this with such care. Can you give us a percentage of the male rats who are exposed to the radiation? What percentage developed malignant gliomas?

Dr. John Bucher: I believe that the percentages were low. They were, I think, 2% at the lowest exposure, 3% at the lowest exposure concentration, and then 5% to 6% at the higher levels.

William Broad: So, it's fair to say between 2% and 6%?

Dr. Michael Wyde: For the glioma.

Dr. John Bucher: I'm sorry. Were you talking about the gliomas or the malignant schwannomas?

William Broad: Yes, the gliomas.

Dr. John Bucher: Okay, I'm going to let Michael answer that question.

Dr. Michael Wyde: Yes. The percentage of the animals, the males, that had the gliomas was between 2% and 3%.

William Broad: Great. Thank you.

Operator: We will go ahead and take a follow-up question from Roni Rabin. Please go ahead, your line is open.

Roni Rabin: Is there going to be a quantitative risk assessment done? If so, who would do that for a human quantitative risk assessment?

Dr. John Bucher: The NTP is not equipped at this moment certainly to do a quantitative risk assessment. The problem, I think, that we face is that there are still not

sufficient information with respect to the actual exposures of people to radio frequency radiation from cell phones. The exposure varies so dramatically when one moves around within a cell unit and it varies depending upon the instantaneous communication between the base station and the phone. It also varies in relation to where you're holding the phone and all of these things make it extremely difficult to compare the findings that we have with our very controlled exposures to the human situation. That's the state of where we are at the moment.

Roni Rabin: Okay, thank you.

Operator: Once again, if you'd like to ask a question, please press the star (*) and one (1) on your touch-tone phone. We'll go ahead and take our next question from Dan Vergano. Please go ahead, your line is open.

Dan Vergano: Hi, thanks again. I forgot to ask. Is it correct or accurate when we report this to say that the panel found more certainty of a connection between cell phone radiation and tumors in rats compared to what you're reporting in February? How should we say that?

Dr. John Bucher: Well, I think, we, overall, the panels had more higher levels of confidence in the association. We use these, what I described as these various levels of evidence, but they're, in essence, measurements of confidence.

Dan Vergano: Thanks very much.

Operator: We'll go ahead and take our next question from Louis Slesin. Please go ahead, your line is open.

Louis Slesin: Thank you. How often do you see malignant schwannoma of the heart in your chemical studies? How surprised should we be that you found this tumor and then part B of the question is given that, whatever your answer is, how surprised were you just to find out that the Ramazzini experiment

similar to yours, it's different but similar, also found this, what I believe, is a fairly [Unintelligible]?

Dr. John Bucher: I believe some of the historical information on malignant schwannomas is included in the report. These are rare tumors and I believe also that the Ramazzini findings where they have perhaps a better historical control rate than we do because they've done more studies using more similar exposures in their hands than we have with respect to the radio frequency radiation studies. They're rare in the Ramazzini findings and they're rare in our studies as well.

Louis Slesin: What does that tell you that the same rare tumor shows up in both studies on RF but is otherwise extremely rare?

Dr. John Bucher: Well, that's the subject of our report and we're making that information available.

Louis Slesin: Thank you.

Operator: Again, that is a star (*) and one (1) on your touch-tone phone to ask a question. We'll go ahead and take our next question from Paul Kirby. Please go ahead, your line is open.

Paul Kirby: Is it common that you do change your confidence level after an expert panel makes recommendations as you did here?

Dr. John Bucher: The historical view on that is that we have accepted recommendations of peer review panels most of the time, if not, almost all of the time. These recommendations, in particular, the recommendations from the cell phone panel came after a very exhaustive three-day evaluation of the findings. If you were able to tune in, you will notice that we went through the first day, talking about the physics and the verification of the exposures themselves and then the second and third days were an interaction between the biologists and the physicists. So, I think these studies were

evaluated, if not more carefully, certainly equally carefully than any others that we've ever done.

Operator: We'll go ahead and take our next question from Ronnie Cohen from freelance. Please go ahead, your line is open.

Ronnie Cohen: Hi Dr. Bucher. In the news release, you're quoted as saying that, by contrast, people are mostly exposed in specific local tissues close to where they hold the phone. Would that increase or decrease the risk for humans as opposed to rodents?

Dr. John Bucher: Generally, you might think that it would decrease the risk but that's an open question at the moment. It gets back to some of the discussions over whether there is a significant component of tissue heating to the biological responses that we're seeing. If, in fact, someone is holding a phone next to a well-perfused tissue, where there would be very little chance of heating, then humans may be considered less susceptible. This is speculation on my part because we don't know – we don't have at the moment measurements of the actual temperature levels of the various tissues that we're looking at in this issue. There's a general issue of comparing the whole body exposures to localized exposures and this is an issue that has to be dealt with when we interpret the findings in relation to public health issues.

Operator: As a reminder, to ask a –

Ronnie Cohen: So...

Operator: Please press star (*) and one (1) on your touch-tone phone if you would like to ask a question at this time. [Pause] We will go ahead and take our next question from Joel from University of California. Please go ahead, your line is open.

Joel Moskowitz: Hi, this is Joel Moskowitz from UC Berkeley. In my submission on the draft report, my comments and in subsequent email communications with Dr. Bucher, I've suggested that the NTP look at the overall tumor risk of the rats rather than looking at simply tumor by tumor. Because my preliminary analysis found a significant increase in both malignant tumors in the male rats that were exposed compared to the control rats and also in non-malignant tumors and the differences were quite substantial and I think they would hold up with regard to any kind of formal analysis of those data, which I extracted from the draft report and the differences we're talking about in terms of cancer risk was 38% versus 25.5% from the male rats that were exposed compared to control rats and for non-malignant tumors, it was 70% versus 54%. Both of these were highly significant but obviously, you'd want to control the survival differences in some other things.

I'm curious as to whether the final reports include such a formal analysis or not.

Dr. John Bucher: Yes, we did go ahead and do the – we added the tumor rates and Michael is paging through the document to make sure I don't make a mistake in something that I say here. We had intended – and I believe we did add the overall tumor rates for the studies to the appendices. One of the problems that we have, and this is a philosophical difference that is a fair argument among scientists about whether one looks at specific tissue types for the tumor analysis or looks at overall tumors, the overall tumor rates are generally governed by somewhat more common tumors certainly than the malignant schwannomas and the gliomas and they tend to be a variable. While it's an important way of looking at these cancer studies and it was used historically for quite some time, we have tended to put more emphasis on the individual tissue sites for looking at specific tumor

increases. That's not to say that your analysis isn't a valuable part of the conclusions or a part of the discussion.

Joel Moskowitz: Just a follow-up to Dr. Bucher. In the draft report, the all organs total malignant and total benign regions were omitted but those have now been added back to the report. Those appear in the appendices in the tables A through D.

Operator: We'll go ahead and take our next question from Louis Slesin. Please go ahead, your line is open.

Louis Slesin: Thank you. Have you briefed the regulatory agencies on your results, namely, FDA, EPA, OSHA, and especially the FCC? Have they asked for briefings?

Dr. John Bucher: Yes, we briefed the FDA and FCC who are the agencies that have primary regulatory jurisdiction over cell phone use.

Louis Slesin: Is that with your new conclusions or your February conclusions?

Dr. John Bucher: We have given them our new conclusions, yes.

Louis Slesin: Thank you.

Operator: Once again, that is the star (*) and one (1) on your touch-tone phone to ask a question. We'll go ahead and pause for a moment to allow questions to queue. [Pause] It looks like we do not have any further questions on the phone at this time.

Dr. John Bucher: Well, thank you very much. [Pause] [Side Conversation]

Operator: We will go ahead and take our next question from Roni Rabin. Please go ahead, your line is open.

Roni Rabin: There's a previous question about whether humans would be – they were protective to humans that the exposure is primarily where they're holding the phone but what about radiofrequencies used in Wi-Fi as well, right, or wireless devices? Would the exposure be throughout the body, not just with that contact point?

Dr. John Bucher: Exposure to Wi-Fi radiation would be probably throughout the entire body. The one thing about Wi-Fi is that it's such a much, much lower power level and the distance between Wi-Fi routers, if you will, in most people is generally fairly large. Radio frequency radiation falls off with the square of the distance. So, it rapidly falls off so that even holding a phone a little bit away from your body decreases the amount of radiation that one is absorbing dramatically. That's one of the reasons that you'll see most of the recommendations for using a cell phone, including the fact that you, whenever you can, use earbuds, use other means of communicating with your phone.

Operator: We'll go ahead and take our next question from Ronnie Cohen. Please go ahead, your line is open.

Ronnie Cohen: Hi, there. There are a number of people who are saying that the World Health Organization's decision in 2011 that radio frequency radiation is a possible carcinogen should be upgraded to a probable carcinogen as a result of your study. Do you have thoughts about that?

Dr. John Bucher: No. I do know that the World Health Organization evaluations rely not only on animal studies but on mechanistic information and on epidemiology findings. There are studies continuing to be done in the field of epidemiology that will potentially influence these results or these discussions as well and I can't tell you whether I would suggest that IARC re-review this at this time.

Ronnie Cohen: Thank you.

Operator: Once again, that is the star (*) and one (1) on your touch-tone phone to ask a question. We'll pause to allow questions to queue. [Pause] It looks like we have no further questions at this time.

Dr. John Bucher: Well, I would like to thank the folks for tuning in today. I would remind you that the information is under embargo until 10:00 AM tomorrow and appreciate, again, your participation in today's call.

END