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Don't panic, mobile phones are still only as carcinogenic as pickles

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Abstract

The World Health Organisation's cancer agency, the International Agency for Research on Cancer (IARC), has classed mobile phones as Group 2B or "possibly carcinogenic" in a new report. In this Q+A Rodney Croft, Professor of Health Physiology at University of Wollongong, explains why we don't need to panic.

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The WHO's cancer agency IARC classed mobile phones as Group 2B or 'possibly carcinogenic', putting them in the same category as pickles. Flickr, Andrew Stawarz

The World Health Organisation's cancer agency, the International Agency for Research on Cancer (IARC), has classed mobile phones as Group 2B or "possibly carcinogenic" in a new report.

In this Q+A Rodney Croft, Professor of Health Physiology at University of Wollongong, explains why we don't need to panic.

How significant a shift is this, in terms of the official advice on mobile phones and cancer?

I don't think it's much of a shift at all. We have had the same data around for a while, the same data that other groups have evaluated recently. They have really reached the same conclusion. There are some individual reports of associations between mobile phones and cancer, but it is difficult to know if they are accurate or not, as others have found the opposite result. If they are accurate, then it's an issue, if they are not then it's not an issue. But we aren't going to be able to answer that with the current research that's out there.

Essentially, what they are saying is there has been a lot of research looking at the short term

effects, and these aren't finding any problems. However, the longer term effects are more difficult to quantify because we haven't got the data on them.

The INTERPHONE study that was out not long ago – which is what they are really citing when they say there's a reported association for users that have been using for greater than 10 years – in that study they reported a possible effect.

But that was not actually significant in a normal sense, it was only if you ignored certain statistical issues (such as having to account for the multiple comparisons that were made) that it might be real. It might be real, but it's not a very strong demonstration. What IARC wants is to see more research to clarify what's going on for long term users.

But isn't saying mobile phones are “possibly carcinogenic” stronger than the previous official findings?

It does seem stronger but I think that's because of the wording of the IARC classifications.

When you look at what they mean by that wording, what they classify as “possibly carcinogenic” includes, for example, substances or exposures where there's no evidence from humans that it's carcinogenic and there's no evidence from animals that it's carcinogenic, but where there's not enough evidence to show that it is definitely *not* carcinogenic. So we don't need evidence of carcinogenicity for it to go down as “possible”.

That's really what people have been saying for some time. There's no evidence out there to suggest it is a problem and we don't have any reason theoretically to suggest it is a problem. And that is certainly consistent with the conclusion that it is “possibly carcinogenic”.

When you look at the stronger class of “probably carcinogenic”, even that doesn't mean they have strong evidence that substances are carcinogenic. They may have no evidence in humans but strong evidence in animals, for instance. They may think, “Well, if it is carcinogenic in animals but there's no good research in humans, then given that we understand the mechanisms in animals then it should be classified as probably carcinogenic.”

But even that's not actually showing a definite causal relationship.

So IARC isn't saying anything new in terms of what the research has shown or not shown. What they are saying is that now their *interpretation* of the data is labelled as “possibly carcinogenic”.

It's difficult because it would naturally make people think, “Ooh, this might be a problem for me,” rather than saying “Look, it's not that surprising, lots of things might be a problem, but probably aren't”. For example we don't really know about coffee and pickled vegetables like gherkins, which are also classified as “possibly carcinogenic”.

But mobile phones have only been around a short time. We don't know the long term effects.

Yes, but the way that orange juice is made today is different to the way it was made 50 years ago. So do we all stop drinking orange juice? Personally, I would say no.

If we were to live our lives based on what is “possible”, then we wouldn't do much at all. Generally, we'd like to see a reason to stop doing something before giving up something that we find useful.

If there's only a possible risk, why did the IARC give tips on how to minimise radiation exposure from mobile phones?

It could well be that as humans on the committee, they have felt they want to hedge their bets. Most people do say, "If you are concerned, this is how you deal with it". Certainly, the methods they give are appropriate in terms of reducing radiation exposure.

However, I find it hard to reconcile that kind of statement with their scientific analysis of the data. They seem to be mixing the science with personal views.

I think that what we are seeing here are personal feelings about what people may or may not do rather than any kind of evaluation based on the science.

It's not just about mobile phones. This report also looks at other electromagnetic field-emitting devices. What about Wi-Fi, Bluetooth and television or radio signals?

Mobile phones produce a higher exposure than most of the other devices. Everything from baby monitors to wi-fi all use the same technology, they all use radiofrequency emissions for their communication. However, they use much, much lower exposures. So the scientists have said, "If there's going to be a problem, it will be with the larger exposures, so let's focus on them first."

The report said that the type of cancer that mobile phones could possibly cause is glioma, a type of brain cancer. Does that mean there's no possible link to other types of cancer?

What they are saying is, based on the evidence, we don't see anything to worry about in terms of these other types of cancers. Certainly, people have looked at other types of cancer such as meningioma, which is a more benign form of brain cancer than glioma. The evidence is more consistently showing that there is no effect there.

What IARC is saying is based on that glioma result in the INTERPHONE study that I mentioned before. In one of the small groupings, which this study wasn't statistically powered to answer, the overall level of cancer was higher algebraically in the users than the non-users. What they are saying is, based on that glioma result, we have to step back and wait and hopefully we'll know if this is a problem in the future.

So what's the take home message about mobile phones and cancer?

The end conclusion that they reached was very much that they have *not* shown that it is carcinogenic. They have classified it as, "There remains a possibility that it is carcinogenic". That's different to saying it *is* carcinogenic.