5G and the suspected dangers

It’s 2020 and although many people don’t have it, 5G is here. Using the interconnectivity of the Internet of Things (IoT), 5G is the next step in digital technology as it will eventually allow devices to work by connecting to each other. The future is here.

Temps de lecture : minute

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Though it’s not yet at the magnitude that it’s expected to be at over the year, networks EE, Vodafone, O2, Three, BT and VOXI all rolled out 5G networks in 2019. Many have linked 5G to a fourth industrial revolution as it allows devices to harness technology in a way that has never been done before. You can think of it as a way of making devices smarter and hence, making us even more reliant on them than we already are.

With any new technology, there’s a new wave of concerns, fears and conspiracy theories telling sci-fi-like tales of mind control, pandemic disease and the end of life as we know it. 5G has raised concerns over the suspected dangers of the technology causing diseases such as cancer, due to what some think will be higher levels of radiation. Is there any truth behind these fears?

What is 5G?

5G means fifth-generation cellular wireless and is a much faster network than 4G. It comes in the spectrums low-band, mid-band, and high-band

and devices can only connect to others with the same spectrum. 5G will provide a more reliable and faster connection and allow for greater capacity so that many people can connect at one time without any connectivity issues. Though, at the moment, the most used version of 5G isn't much better than 4G.

Who has it?

In the UK, networks EE, Three, Vodafone and BT all offer 5G. EE provides 5G across 50 towns and cities in the UK and boasts an instant connection, better quality and quicker speeds. Three claims to be building the fastest 5G network in the UK with 140MHz of 5G spectrum. Vodafone offers 5G in 40 locations across the UK and BT provides 5G in 61 towns and cities in the UK including Belfast, Birmingham, Cardiff, Coventry, Edinburgh, Leicester, London and Manchester. O2 offers 5G in 20 cities.

What stage is it at?

According to PC Mag, we won't see much in the way of 5G being used widely and by large applications until around 2021 and 2022. But when it is here, 5G will be a faster, more reliable connection which allows for more devices to be connected to each other at once.

What science says

It all sounds great so far as the further our lives merge with the digital realm, the more we increasingly become reliant on faster speeds and more superior connectivity. Many of the health concerns come from

worries about radiation. Radiation poses a very real threat when it is Ionising radiation. Public Health England has stated that Ionising radiation (a type of radiation that travels as a particle or electromagnetic wave and carries more energy than non-ionising radiation) can damage cells and lead to an increased risk of cancer later in life.

This cancer risk is not associated with non-ionising radiation which is generated by mobile phones and is in the electromagnetic spectrum but at the lower end. This is also generated by microwaves, radio waves, infrared radiation and visible light. There hasn't been sufficient enough evidence to cause major concern over non-ionising radiation, only the advice to limit exposure where possible due to potential health risks.

In 2011, the NHS stated that mobile phones were now classified as being possibly carcinogenic by the World Health Organization (WHO) due to a study highlighting a possible link between mobile phones and brain cancer. They went on to state that the classification does not mean the link is definite as the evidence found is 'limiting.'

To put this into context, exhaust gas, pickled vegetables and chloroform have also been classified as possibly carcinogenic. The consumption of red meat is listed in a higher category and therefore has a much stronger link to causing cancer, as does drinking alcohol and solar radiation.

The perceived dangers of 5G

Back to 5G. The new technology has no increased health risks, dangers or links to cancer. In 2019, the BBC reported that because 5G technology needs more transmitters, the transmitters will run at lower power levels than 4G, meaning that radiation exposure levels will be lower. They also mentioned how 5G uses higher frequency waves than 4G. In *The 5G*

Health Hazard That Isn't article published by The New York Times (NYT), the writer stated how, according to experts, the effects of electromagnetic radiation at higher frequencies were, in fact, much safer, not more dangerous.

The NYT also debunked the study that started it all. Back in 2000, physicist Bill P. Curry researched the health effects of wireless technology and famously found a frightening correlation between radio waves and brain cancer. He stated that the brain received more radiation with increased frequency of the wireless signal from wireless network technology.

The NYT article explains how Bill P. Curry looked at lab studies and misunderstood how radio waves actually affected cells inside the human body. It further clears up how Curry didn't recognize the protective effect of human skin and how skin acts as a barrier to higher radio frequencies. Despite this, the study has led to fears that are just as prevalent today as they were 20 years ago when it was first published.

Scaremongering from Russia, particularly from Russian website RT America is widely thought of as a leader in contributing to public fear over the rollout of 5G technology. The website has been consistent in publishing sensational articles about 5G's effect on health, though, Russia has recently launched 5G in Moscow.

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To conclude

5G isn’t any more or less harmful than any other mobile technology out there. However, limiting the use of devices that emit electromagnetic waves is not a bad idea. A healthy dose of scepticism is not a bad thing when it comes to understanding the substantial amounts of new tech brought out year after year. Though, this scepticism should be balanced with proper research to avoid falling victim to scare-mongering hyperbole with hidden agendas.

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