

Allaying health concerns regarding 5G and exposure to radio waves

5G is just as safe as 4G, 3G and GSM

There has been an "infodemic" of misleading and false information about 5G and alleged health effects. Some of it is pure fantasy, but there have also been sincere concerns expressed by some people, including scientists, who are not up to date with how 5G has evolved in the UK.



What is 5G?

5G is the next evolution in mobile technology that will provide the underlying wireless infrastructure to cope with the relentless rise in data consumption and support many new applications. This includes everything from connected cars and virtual and augmented reality through to the foundations for emerging smart city and Internet of Things (IoT) technologies.

Features of 5G



Faster download speeds

It is expected that 5G will provide Gb/s data speeds. This would mean things that currently take minutes to download would only take seconds. Even more important will be the ability to support higher download speeds for many more concurrent users in the same place. This will lead to a more predictable and consistent performance.



Lower latency

5G can support significantly lower latency, where appropriate, meaning very little lag, or buffering. This could enable mobile applications that simply aren't possible today, such as multiplayer gaming, factory automation and other tasks that demand quick responses.



Greater capacity

5G will also have vastly greater capacity, allowing networks to better cope with not only the rapidly increasing data demands of customers today, but also the growth of high-demand applications being planned in the future.

Key Observations

- 1 There has been no dispensation for 5G safety standards. It will have to meet the same safety standards as 4G, 3G and GSM, making it just as safe.
- 2 "Higher frequency" (mmWaves) commercial 5G mobile antennas have not been deployed in the UK and none are currently planned.
- 3 5G technology, in terms of radio wave exposure, is very similar to 4G, and in terms of its pulsed signals, the same as GSM, DECT cordless phones and a version of 4G.

Frequently asked questions



Some scientists and doctors claim 5G to be particularly harmful – how can they be wrong?

We believe these concerns are sincere but appear to be based upon a scant knowledge of 5G as it affects radio wave exposure. That is why the IET believes it is important to listen respectfully to these concerns, investigate the 5G dimension and build a bridge to better understand 5G technology, the frequencies being used and how they are being deployed in the UK, Europe and many other countries.



You are saying 5G is just as safe as 4G, 3G and GSM but some people dispute whether those earlier technologies are safe?

The IET has investigated the specific claim that 5G poses uniquely greater exposure risks to health and our findings are emphatically "no", it does not. Anything beyond this was not in the scope of the investigation.



Can the use of mobile phones cause cancer, infertility etc.?

The International Commission on Non-Ionizing Radiation Protection (ICNIRP) has found no evidence to support these theories. Since 5G is just as safe as 4G, 3G and GSM, it follows that 5G will not be in any different class of risk.



Aren't the anti-5G groups particularly against the use of higher frequencies for 5G across the UK?

There are no "higher frequency" commercial 5G mobile antennas deployed anywhere in the UK and none are currently being planned. Further, higher frequencies will never be used in the same way as lower frequencies for 5G coverage. Whatever uses may be in the future, they will always be safety compliant.

Calling all manufacturers to publish Specific Absorption Rate (SAR) values

The ICNIRP has incorporated a very large safety margin in setting the safety limits for smartphones. But against a background of a huge disinformation campaign about the safety of 5G, the IET believes it makes sense for the industry to offer those consumers that remain concerned a choice of adding an even larger safety in the use of their 5G smartphones. This way, they can feel more confident in accessing the benefits of 5G.

For this reason, we are calling for all smartphone manufacturers to publish their SAR values in the publicly available tech specs of their products. This information is not always easy for consumers to locate. These values measure the maximum energy absorbed by a unit of mass of exposed tissues a person using a mobile phone absorbs.

Data gathered from a number of 5G smartphones in the UK show all were compliant and some significantly under the safety standard.



The full report: Allaying health concerns regarding 5G and exposure to radio waves is available at theiet.org/5G-health